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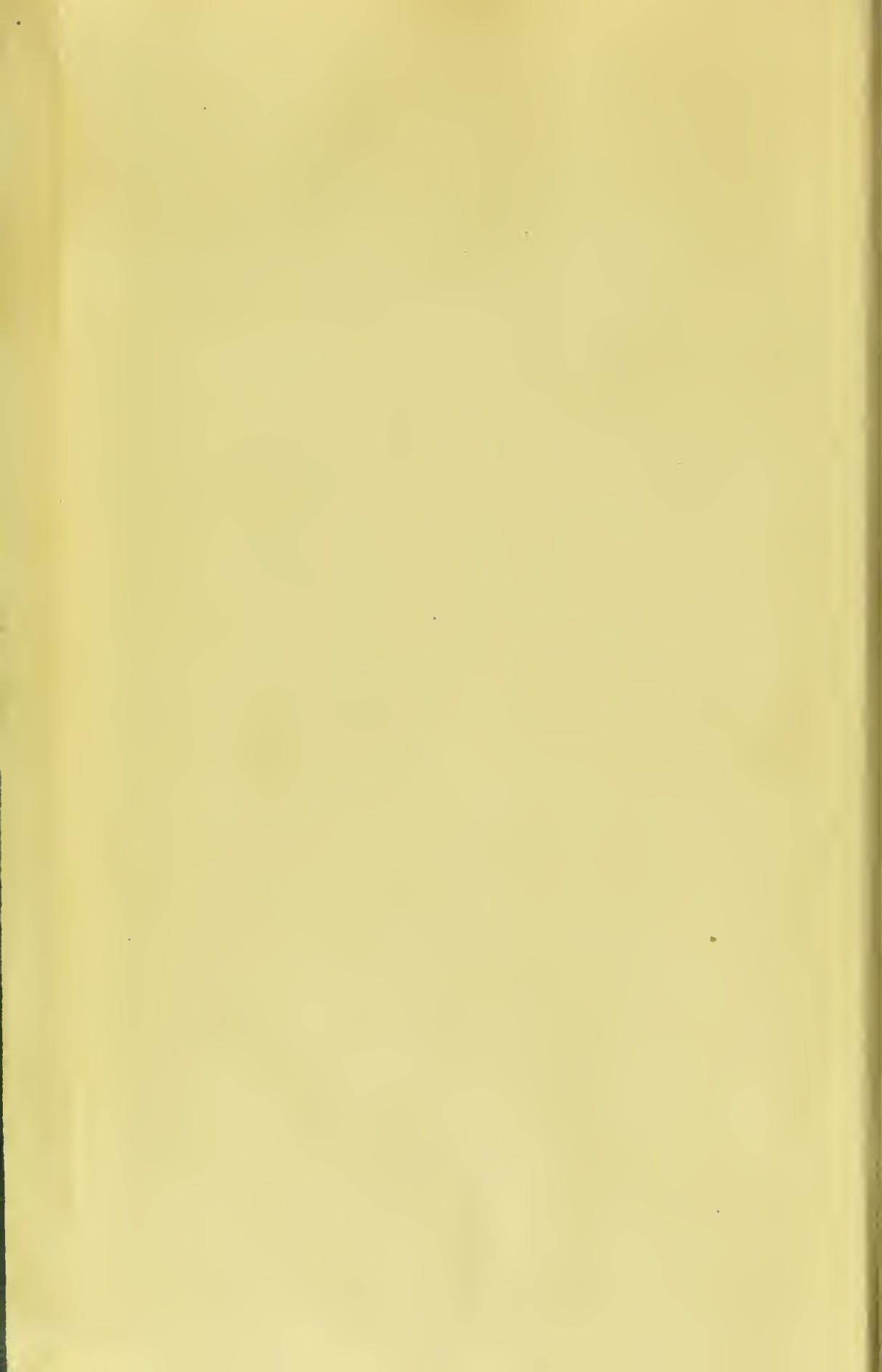
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OBSERVATIONS
ON THE
NATURAL HISTORY,
CLIMATE, AND DISEASES
OF
MADEIRA,
DURING A PERIOD OF
EIGHTEEN YEARS.

BY WILLIAM GOURLAY, M.D.

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London

PRINTED FOR J. CALLOW, MEDICAL BOOKSELLER,
CROWN COURT, PRINCES STREET, SOHO.

By J. Smith, Queen Street, Seven Dials.

1811.

30 64-18

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To W. R. CRAUFURD, M.D.

PHYSICIAN AT CLIFTON.

My dear Sir,

*P*ERMIT me to inscribe to you the present Work on a subject with which you are so conversant, and which formed so much the object of your study during your late residence at Madeira. In doing this, I am sensible I am only paying that due respect to your character, as an able and scientific Physician, which the public have long acknowledged; but I should reckon this motive insufficient, were not others of a private nature connected with it, equally creditable to your feelings as a Man. It is my wish to seize the present occasion, to express the sentiments of gratitude, by which I feel actuated for your unbounded and disinterested kindness to my family, and I trust it will remain a lasting testimony of affectionate friendship on my part, from

Your faithful and obliged

humble servant,

WILLIAM GOURLAY.

Madeira,

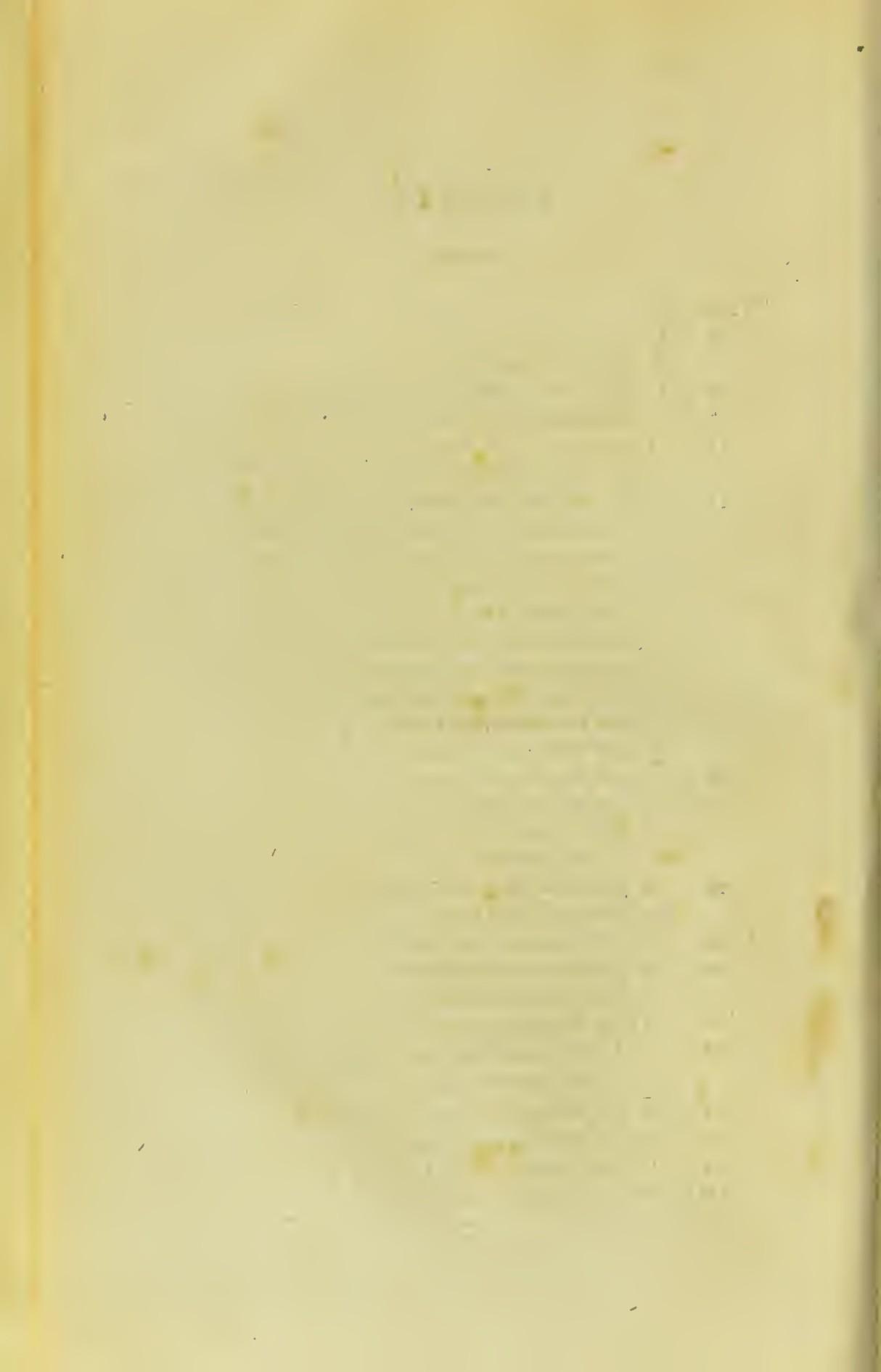
September 23d, 1808.

This work being printed in England, is necessarily deprived of such last corrections as it might have received from the pen of the author;---a circumstance which will also sufficiently apologize for such errors, as, under a dubious reference to the MS. may, without the imputation of negligence, have escaped the attention of the person to whom the superintendance of the publication was entrusted.

ERRATA.

PAGE. LINE.

- 3 11 *for Toá, read Joá*
 19 *for Toá, read Joá*
5 16 *for Terno, read Ferro*
7 In marginal note, *for Loo beech, read Loo rock*
10 8 *for Labo, read Cabo*
 10 *for Venta, read Ponta*
13 2 In the marginal note, *for Toá Africo Conrea,*
 who died at Comera de Labos, *read Joá de*
 Betencourt, who died at Camera de Lobas
 6 *for arevo, read arobe*
 11 *for Cathoa, read Callão*
15 7 *for Boalerdo, read Basterda*
 8 *for Neprinha, read Negrinha*
 9 *for Neprinha, read Negrinha*
 for Lestrong, read Lestrang
 13 *for Dodo, read Dedo*
16 15 *for Paiza, read Paixa*
17 7 *for hé, read Pe*
 15 *for hé, read Pe*
 17 *for hé, read Pe*
20 2 *for ascerbency, read ascerbity*
 28 *for zayo, read faya*
25 25 *for tao fish, read Jew fish*
26 2 *for abrato, read abroto*
 13 *for craco, read craca*
76 1 *for Toaquina, read Joaquina*
102 In the prescription, *for Confect. Catechu. 3 ſs.*
 read Confect. Calech. 3 ſs.
103 16 *for alkolescency, read alkalescency*
125 10 *for Oyeiro, read Vyeiro*
127 12 *for Ludovina, read Ludavina*
143 11 *for Carcius, read Caverns*



PREFACE.



NO particular History of the Climate and Diseases of Madeira has yet appeared in English, which is the more surprizing, from it having been so long the resort of the British, both from the intercourse produced by trade, and also as the dernier resource of the consumptive invalid, to escape the rigorous winter of his own climate. But the late changes in the political hemisphere, have given the British government a new interest in this island. A British garrison has been appointed for its defence, and the southern parts of Europe, being inaccessible to patients on the score of health, this spot has on both accounts a claim to particular attention. Every thing therefore relating to it at the present period becomes highly important, and I feel it peculiarly my duty to convey such information as I have acquired, during a residence there of no less than twenty-five years, accompanied with all the advantages of an extensive medical practice. Such information will,

I hope, prove useful, as it is grounded on long and attentive investigation of the subjects on which it is delivered. In regard to my Observations on the Climate, they have not only been made with particular care, but they are also illustrated by a Meteorological Register, accurately kept during a period of ten years. The Diseases of the Island I have arranged into two divisions, of Endemic, and Epidemic. To the former head belong Elephantiasis, the Cutaneous Affections of Itch, Oucas, Alfora, Sudamina, and Essera; Catarrh, Pneumonia, Phthisis, Obstructions of the Viscera, &c. &c. The latter includes Scarlatina, Dysentery, Small-Pox, Measles, Pertussis, &c. Of these diseases, Elephantiasis, Phthisis, Scarlatina, Dysentery, and Measles, have more than the others claimed my sedulous attention; and when treating of Phthisis, I have directed my remarks chiefly to that species of it, which appears in those patients who arrive from Britain to enjoy the benefit of the climate of Madeira.

To the work is subjoined a small Appendix, containing an Account of the Mineral Waters of St. Miguel.

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PART I.

NATURAL HISTORY OF MADEIRA.

CHAP. I.

Discovery of the Island.

THE Island of Madeira, ever since its discovery, has formed a valuable possession of the Portuguese crown. The only authentic accounts of it, therefore, are to be found in the Portuguese writers. Cordeyro, the most accurate historian on this subject, gives the credit of its first discovery to the English, and in this he is confirmed by the unanimous testimony of other authors. According to this writer, an English nobleman, of the name of Machim, having carried off a young lady, named Arfet, with intention to land in France, then at war with England, was driven from Bristol, whence he set sail in consequence of a tempest, which cast his vessel to and fro for a great many days to a point of land, from the summit of which

was discovered a river emptying itself into the sea. This happened in the reign of Don John the First of Portugal, and Edward the Third of England, and the land thus discovered proved to be Madeira. Having disembarked with his crew for the purpose of refreshment, the return of the tempest compelled them to remain, and during the violence of it, on the third night after their landing, their vessel disappeared. The fatigues of the voyage proved fatal to the lady on the sixth day after reaching land, and this melancholy event so affected her lover, that he followed her in a few days after; having first, on the spot where she died, erected a monument to her memory. These circumstances are thus pathetically described by the poet—

“ He laid her in the earth,
“ Himself scarce living; and upon her tomb,
“ Beneath the beauteous tree where they reclin'd,
“ Plac'd the last tribute of his earthly love.”

His unhappy followers, thus left to themselves, resolved to quit the island, and in a boat formed from the wreck of their vessel, or the trunk of a tree, according to other accounts, they once more committed themselves to the perils of the ocean. They happily, however,

in a few days, reached the coast of Barbary, where they encountered a fresh hardship in being sent prisoners to Morocco. On their arrival in this capital they met the remainder of their companions, who had been separated from them by the storm, and reached the Barbary coast in the same manner. Thus situated, the memory of their past misfortunes occupied entirely their minds, and engaged their conversation, which excited the curiosity of a fellow-prisoner, a Spanish pilot, Toā de Amores. This person, during his imprisonment, made himself acquainted, from them, with the place of their departure, and the winds which blew during the course of their voyage, as well as the time it occupied. When set at liberty soon after, he was captured on his return to Spain by a Portuguese vessel, under the command of Toā Goncalves Zarco, off the coast of Algarve, and carried to Lisbon. On being captured, having communicated all the particulars of the new island to the captain, they both waited on the Infant Don Henry, a prince of an enterprising and gallant spirit, and by him were referred to his father, Don John the First.

A ship was immediately granted to Zarco, for the purpose of making good the discovery of this new island, with which he sailed from

Algarve upon the first of June, 1419. In a few days he reached the Island of Porto Santo, then governed by Bartholemeo Perestrello, and leaving it, in a few days more completed the object of his voyage, by discerning the new island, presenting the appearance of a perpetual black cloud.

His first landing was at point St. Lawrence, which he named from his ship, and sailing southward he entered a spacious and beautiful bay, where he cast anchor. Here one of his followers, Rui Paes, was sent on shore to make observations on the situation and appearance of the island. He landed exactly on that spot the English had formerly occupied, it being the only place that permitted him to disembark, from the impenetrable trees which reached to the water's edge, and logs of wood brought down by the river, heaped on the beach. The report of this observer, however, was favorable on the state of the country, which he found fertile, abounding with green fields and groves of trees. In his investigation, having at last, by marks of footsteps, traced the tombs of the lovers, Machim and Anna, he returned to the vessel with his discoveries. On this information, Zarco, accompanied by two priests, disembarked on the second of July, 1419, at the

spot of the sepulchre, and there took possession of the island, having performed the ceremony of first returning thanks to Heaven for the fortunate discovery of it, which was followed by the celebration of mass in a small hut discovered to have been formed in the trunk of a tree. The service of the dead was then performed over the tombs of the lovers, and the business completed by founding a church dedicated to Christ.

Situation and Face of the Country.

Madeira is situated in 32 degrees, 37 minutes, 30 seconds, north latitude, and in 17 deg. 5 min. longitude, west of Greenwich, about 80 leagues N. by E. from Teneriffe, 120 leagues from Cape Cantin, on the coast of Africa, nearly 100 leagues from the Isle of Terno, and about 17 leagues S. W. from Porto Santo. It is about 120 miles in circumference, its greatest length from E. to W. being 45 miles, its greatest breadth from S. to N. 15 miles, and its least breadth $8\frac{1}{2}$ miles.

It is formed of lofty mountains, of hills, and fruitful vallies, and in figure makes an oblong irregular quadrangle. Its capital is Funchal, which is situated on the south side of the island,

at the bottom of a spacious valley, open to the sea, and surrounded by lofty mountains, having all the appearance of an amphitheatre gradually ascending to a great height. Its mountains and hills generally rise with a slow ascent, the highest points of land being about 8250 feet, or one mile and a half, above the level of the sea. The situation of Madeira, in some places, presents a most picturesque and enchanting appearance, while in others, huge perpendicular rocks, lofty precipices, prominent ridges, deep excavations and chasms, innumerable cascades, liberally supplied with rivulets, beautiful vallies, deep gullies and ravines, containing immense torrents of water, afford a highly varied, sublime, and no less alarming picture of nature.

CHAP. II.

Soil of Madeira.

There can be no doubt that this, like most islands, has sustained, at different periods, several violent concussions and derangements, from the action of subterraneous fires and volcanic eruptions. In innumerable places of the island, there are the most convincing proofs of this

fact. There exist evident marks of two craters, and in all parts of the island the stone has compleatly the appearance of lava: strata of pumice, and scoria perfectly vitrified every where abound.*

The soil of Madeira was for many years, I apprehend, after its discovery extremely fertile, and yielded in great luxuriance every production of nature, especially towards the coast where the lands are flat; but it must have materially changed since that period, having been under cultivation for now nearly four hundred years. In this time it has furnished a constant succession of crops, with the assistance of little or no manure. Besides it is presumable, from the extreme steepness of some of the lands, that the greatest part of the soil proper for vegetation, has been carried off by the occasional torrents of rain in the winter months; for many situations, which formerly produced some of the finest wines in the island, now present nothing but bare rocks, or, perhaps, small hillocks of earth.

The most common soil is pumice stone, of the consistence of soft rock, mixed with a pro-

* This scoriated appearance, and other marks of the action of fire, are very evident at the landing place, which is opposite to the Loo beech.

portion of clay, sand, and marle,* and also a dark red earth, consisting of the three latter ingredients, only without the pumice. Several of the smaller hills, consist of a black or grey sand, a great proportion of which is lava or scoriated matter. These varieties of soil are all proper for the vine; but, being very poor, they require the frequent assistance of manure; for otherwise the plants soon decay, or produce very scanty crops. It is however a curious fact, that the lands which produce the best wine, are in general rather poor; thence a great deal must also depend on local situation.† In some places near the river, a black mould, of a shingly nature, is met with, while in the small flats, at the bottom of declivities, and near the shore, there is found a stiff clay. In some of the higher lands there is a kind of marle, intermixed with layers of stone, which is very pulverisable, and is soon decomposed. When this last soil is properly manured, it answers

* Pumice stone, in its natural state, being easily worked upon, the natives frequently make fences of it for their vineyards.

† Two of the principal circumstances necessary to vegetation, are known to be a certain degree of moisture and a proper temperature. Whenever these are properly applied to the vine, it is certainly always productive of good wine.

well for a variety of vegetables, especially the potatoe. The mountainous parts of the country, and what the natives call *serras*, are poor meagre lands, from which the natives have a scanty crop of rye, once only in six or seven years, when the soil has been previously manured by the ashes of the broom, which has been suffered to grow upon it, in order to be burnt for this purpose. In some places, also, they grow potatoes, by means of the dung they procure from the cattle they feed. There can be no doubt, however, that these lands, though naturally of a poor quality, might be rendered more productive, if a proper mode of cultivation was introduced; and by the same improvement also, it would be possible to rear a greater number of cattle.

The rocks of this island consist, in general, of a blue stone, called by the natives *pedra viva*, something like our whin stone; but, in reality, lava—there are several varieties of this stone. It is often found having the appearance of basaltes; and, at other times, as at Mexico, a village ten miles from Funchal, in the form of glass embedded in loose earth. Of the free stone, there are here two kinds in common use, the one of a hard, the other of a soft nature; of the first there are two species, of which that

species only which is got in *Estreito* parish, is used in Funchal, the other being, from the coarseness of its grain, too hard to work, and incapable of receiving a good polish. Of the second there are also two species, generally distinguished from each other by their colour; in the one it is red, in the other grey. They are both used in Funchal, and procured from *Labo Geram*, a few miles to the westward. There is also another kind of this stone at Venta de Parga, about twenty-eight miles to the west, which has much the appearance of grey marble, and though little used takes a very fine polish. In some parts of the island too there is a kind of lime stone, or gypsum, but at too great a distance to be used in Funchal, which has its supply from Porto Santo.

CHAP. III.

Vegetable Productions.

From this general view of the soil of Madeira, it will readily be conceived, that if properly cultivated, it might be rendered capable of yielding the productions of every quarter of the world, from the advantage of its temperate climate and mild atmosphere. It is known that not only tropical, but also European, and

even more northern fruits, grow here to perfection. The island affords a great variety of indigenous plants. When first discovered it was literally an entire wilderness ; groves of trees, chiefly cedar, and some of them of a very great size, reaching to the sea shore. But the cedar, then in such plenty, is now seldom to be found, except in the interior parts of the country, which are of difficult access. The tree which thrives best, and is most generally cultivated in the upper lands, is the *pine* tree. It arrives at a considerable size, and is highly useful for most domestic purposes. Besides it is not nice in the soil required for its growth, and answers on wastelands fit for nothing else. The chesnut tree is also one very common here, and grows with the same luxuriance and beauty as the others enumerated. Its fruit also is in great abundance, and in times of scarcity forms a useful substitute for the farinaceous grains. The poplar tree is also one not less common than the others, and here preserves its verdure for a longer period than in Europe. I may also numerate the wild olive, the orange tree, the laurel, and many others distinguished either for their beauty or use. I cannot however omit the nasso wood or, *lignum klodium*, which furnishes the beautiful fine coloured boards that vie with mahogany for

domestic uses. The aloe plant is also a common production here, as well as the species of laurel, from which the camphor is produced.

This island also boasts of being the first situation in the western world where the *Arundo Saccherifera*, or sugar cane, was cultivated. The sugar of Madeira is uncommonly fine, and possesses a peculiar violet smell. At what period it came here from the east cannot be accurately determined, but it must have been soon after the discovery of the island. From Madeira it was transplanted to the Brazils, and in consequence of a severe blight which affected its cultivation in this island, it came to be discontinued, and to give place to that of the vine, as an article of easier management, and more profitable growth. Hence it has been neglected ever since; though political reasons may have also had some share in its being so completely given up.

The vine was introduced into Madeira from the Island of Cyprus, but at what period it is difficult to learn. Chaptal, whose authority claims the first respectability for philosophical research, relates, "En 1420 plusieurs Souverains de l'Europe voulurent obtenir de vins de liqueur de vignes, qui croisent dans les territoires de leur domination les Portugais avoient introduit

dans l'Ile de Medere, de plants de celle de cy-pre dont le vin passoit alors pour le premiers de l'univers et cet essai réussit." It is somewhat to be doubted however that it was introduced at so early a period. If it had been so, it would have been cultivated in a very small quantity, as the island was only discovered the year before, and then abounded with such a quantity of wood, even down to the sea shore, as shewed it to be quite in an uncultivated state. Some time must have elapsed before much land could be cleared or prepared for any purpose, and it is most natural to suppose that the land so cleared would in the first instance be appropriated to the necessaries, rather than the luxuries of life.*

* It is however to be observed, that in one of the *Register Books* of Wills that one Toa Africo Conrea, who died at Comera de Labos, in the year 1491, left behind him memorandums of some debts which were due to him for sugar he had sold to different persons at the current price of 300, or 1---6. sterling per Arevo. These debts it was his desire should be employed in purchasing a sheep, a quantity of wine, and a sack of wheat, to be given as an offering on occasion of the first mass being said at an altar he had ordered to be erected in the Church of Nossa Senhora de Cathoa, and also it is said he left some lands, cultivated with the sugar cane and vine, for similar purposes. Hence it is evident that the vine plant, if not introduced exactly at the

In Madeira the vine is generally propagated from cuttings, as the preferable mode of culture, rather than from the seed. In former times it was planted with the plough, to a depth pretty much the same as that which the vine is now planted in France, being a depth of 12 or 18 inches. But at this first period the soil must have been much richer, and the nature of it, as much as the circumstance of climate, determines the depth to which the vine should be planted, as regulating its fitness for vegetation. It is probable also, that the rains at that period must have been more regular, from the island then abounding more with wood. The case however now is very different, from the poverty of the soil, and the frequent droughts. Hence it is found necessary to plant the vine to the depth of from 3 to 6 feet. It being protected from the hard ground at the bottom of the trench, by a quantity of loose earth placed underneath.

Although the vine grows in any soil when attention is paid to the depth of planting it according to the nature of the land, yet it seems to delight in one kind of soil more than another. Thus a free light sandy or gravelly soil, is preferable for it to any other, by allowing its

date of Chaptal's account, might have been so at least not long after the discovery of the Island.

roots to spread wider, and to draw nourishment with ease from the extensive surface. While a stiff clayey soil, by opposing its growth, is unfavourable in the same degree. A very great variety of grapes are produced in Madeira, such as the Negro Mole---Verdelha---Bual Barterdo Preta---Boalerdo Branca---Babosa Tarantey---Neprinha---Marotta---Casuda Neprinha de Agoa de Mel---Lestrong Galija---Castelhaw---Bringo---Malvazia---Malvazia Rocho---Malvaziam---Sercial---Sercial Groça---Uva de Lisboa---Alicant---Preto---Alicante Branca ---Ferral---Muscatel---Dodo de Dama, &c. &c. &c. But if this great number of kinds was reduced to the Negro Mole, the Verdelha, and the Bual, the wines would certainly be of much better quality.

The vintage in Madeira begins early in September---the process of making wine is extremely simple. The grapes immediately when cut are put into the press, which is a machine of great simplicity in its construction, and not unlike the instrument used in England in the making of cyder. It consists of the *Paixa*, or reservoir, with the Fuzo, or spindle, and the *Vara*, or lever. The *paixa* is of a square or oblong square figure, made of the plank of chesnut tree, about two feet thick, and sup-

ported on three large beams. The vara, or lever, goes across the reservoir, which extending nine or ten feet beyond the paixa, is connected at its furthest extremity, where there is a female screw, with the fuzo, or spindle. The upper end of the fuzo is a male screw, while its lever end is fastened by means of an iron spindle to a large stone, the size of which is proportionate to that of the press. When the grapes intended to be prest are all cut and placed in the reservoir, three, four, or more labourers enter that part of the machine, and with their feet tread the grapes so long as any juice can be expressed from them. The juice is allowed to run into a vessel under this *paixa*, through a hole at its middle, or at one corner, over which is generally placed a small basket by way of a sieve, in order to prevent any of the husks, seeds, or stalks from escaping. After this first pressure, or treading, the mashed grapes are collected into one heap, which being surrounded by a cord in close circles, and having boards and pieces of wood laid about it, is then placed under the lever, which is forthwith sunk upon it, and allowed to remain in this situation till the liquor ceases to flow. It is then raised, the boards and cords are taken off, and the mass being broken in pieces by tools something like hoes, is made to

undergo a second treading or pressure, and again also subjected to the operation⁷ of the lever. This process is even repeated to a third time, with the view of obtaining a further quantity of wine from the grape; and lastly, a fourth time, for the purpose of procuring the *Aqua hé*. In this fourth or last time however the mass when broken up is as dry as a piece of chip, and therefore previous to treading it, it is necessary to add to it a quantity of water in the proportion of two barrels to every pipe that has been obtained of juice. Thus if twelve barrels of wine or juice have been obtained, two of water are added. The mass for procuring *Aqua hé* is generally put under the pressure in the evening, and allowed to remain in this situation till next morning, when the *Aqua hé* is drawn off, and put into casks for immediate use.

The manner of making the *Tinta* wine from the black grape, called *Negro Mole* and *Verdelha* is somewhat different, for the grapes only undergo one pressure by the lever, and are afterwards drained through a common sieve, which allows the husks and seeds also to pass, the stalks only remaining behind. The whole is put into a vat, open at top, and stirred three or four times a day for about a fortnight, and when the fermentation is finished, it is racked off into

casks. The treatment of the must, or unfermented wine, is also simple. It is taken out of the *receiving cask* the same day it is prest, and put into others in order to undergo fermentation. In fine weather the fermentation begins almost immediately, which appears by the liquor rising and evolving a considerable quantity of fixed air, or carbonic acid gas: but in damp or cold weather, this process is somewhat tardy. Wherever the grapes when cut have attained a proper degree of maturity, the fermentation is rapid, and the wine turns out good. The ebullition generally ceases in about a month or six weeks, or perhaps sooner; but, still a certain degree of fermentation continues to go on, especially in the case of rich full wines.

In order to clarify Madeira wine, there is generally mixed with it a kind of gypsum alabaster, called *geco*, brought chiefly from Spain. The mixture is stirred twice a day till it begins to have a vinous smell, and the carbonic acid gas is evaporated. This clarification is in Madeira the last part of the process in the manufacture of wine, nothing further being considered requisite, than to rack it off from the lees, which is generally done about the beginning of the year. The wines from the north-

side of the island, and those from some of the upper lands in the *Serra*, are allowed to ferment in the casks, without any assistance or addition whatever. From the variety of grapes found in Madeira, it might be concluded, that there would be a corresponding variety of wines, and indeed from each of the particular species of grapes detailed, a particular kind of wine may be obtained; but the different grapes are generally all mixed together in making Madeira wine, except the Malmsey and Sarceal grapes; the former giving a wine which is reckoned *superior* to any *sweet wine*; and the latter another, *superior* to any *dry wine*, much esteemed on account of its scarcity and high flavour. *Tinto* grape also, gives a wine much the flavour of Burgundy, but it is commonly mixed with the other wines.

There is made annually, upon an average, from 25 to 30,000 pipes of wine in Madeira; one half of which is exported, and the other half, and sometimes more, is consumed in the island. This wine is reckoned superior to any of the southern wines, and certainly contains a greater proportion of saccharine matter, of alcohol, and of aroma, than any of them; the aroma however is not properly evolved, nor indeed does the wine acquire its peculiar degree

of activity, till it has lost somewhat of its austerity and ascerbency, by the regular application, for a length of time, of a certain degree of heat, or of heat and motion, which is found best obtained by allowing it to acquire a certain age in Madeira, or transporting it to a warmer climate, and there depositing it for a longer or shorter period. Hence has arisen the practice of giving such wines as are intended for British consumption, a voyage to the West Indies, or round the East Indies, China, and the Brazils, and occasionally allowing them to remain in one or other of those climates, for a few years before they are sent to England. The merchant generally ships such wines, when he has it in his power, on board large vessels nearly full of cargo, and if placed at the bottom of the hold the wine is found to improve most. Indeed it must be admitted, that the most improved Madeira wines are those that have undergone such voyages.

Besides the trees already mentioned, which grow on the higher lands of the island, the mountains are also covered with several varieties of brush wood. The principal of these is the heath, which reaches here to a great size; as also the broom, and a kind of beech, called *zayō*; a species of bilberry, *vaccinium*. In

In the midst of these the strawberry is found, growing wild and in great abundance, yielding its fruit from March to July; the myrtle likewise is found in great plenty.

Several varieties of pot-herbs grow here with the greatest ease, such as succory, fennel, water cresses, samphire and beet. Of the plants too styled medicinal there is a great variety; as the common wormwood, maiden hair, agrimony, winter cherry, lavender, the different species of mint, rosemary, wild lily, and daffodil. The fences chiefly consist of brambles, prickly pear, wild rose, honeysuckle, and some other thorny bushes, which render them almost impenetrable.

It would be foreign to my plan to enumerate more particularly the plants which grow here spontaneously. I must not, however, pass over in silence the majestic palm tree, which grows to a great height, flowers and bears fruit in great abundance, though it never comes to perfection, nor do the seeds, when planted, vegetate: all which proves that the plant in Madeira is a female, and that there is no male one in the island by which it might be fecundated. The branches of this tree, when blanched, are used as ornaments in the religious processions on Palm Sunday.

Of the vegetables produced by culture, there are also in Madeira several varieties; and by a little more attention, the table might be supplied with abundance for the whole year round. Under this head are the several varieties of pulses, herbs and roots. The roots, in particular, are much used by the inhabitants in diet, such as the yam, potatoe, sweet potatoe, turnip, onion, &c. &c. The yam grows generally in low situations, where there is a plentiful supply of water, and is very easily cultivated. The potatoe has proved of late years, an useful production, and could still be cultivated to much greater advantage: indeed the island might, during the whole year, be plentifully supplied with this article, the nature of the soil in those situations, where nothing else could be planted with advantage, being most favorable to its growth. The sweet potatoe is now very generally propagated, is of easy growth, and like the common potatoe forms a cheap and nutritious article of diet. Here the onion grows to the greatest degree of perfection, and to an uncommon size, being extolled for its mildness, and wanting that acrimony which distinguishes the onion of northern climates: so abundant is its growth in this island, as to have been made an object of exportation.

It has been formerly observed, that northern and tropical fruits grow here in great plenty, and might be brought to the greatest perfection, if a little more attention was paid to their culture: most of the fruit trees grow here spontaneously, but are, unfortunately, often subject to the *blight*, which entirely destroys their produce.

Of the stone fruits, there are the cherries, plumbs, peach, nectarine and apricot.

Of the apple tribe, the common apple, pear, medlar, quince, pine apple, orange, lemon, lime, bergamot, pomegranate, guava and banana.

Of the small seeded fruits, the strawberry, red and white currant, gooseberry, bilberry, mulberry and grapes, are the principal ones.

Of the farinaceous fruits, the cucumber, melon and pompon, are the chief: the last is much used as an article of diet.

CHAP. IV.

Animals.

Madiera is known to afford a plentiful supply of cattle, at all seasons of the year, and were proper precautions taken by the inhabitants, to procure a sufficient supply of dry provender, for seasons when the grass is scarce, no want would be felt at any time on this head. The beef here is of good quality, and during the summer months, when provender is abundant, not much inferior to English beef: but in winter, when the grass is poor, and no dry fodder to assist in feeding the cattle, the meat becomes uncommonly lean, and also very scarce; especially when there has been a want of rain, and the proprietor of cattle is unable to bear the expence of feeding them. Mutton is not so much cultivated here as it ought, and consequently not so fine and well-flavoured as in England. The flesh of the kid, or young goat, is here preferable to lamb, and generally used in its place; nor is the pork equal to that of America or Britain, though in this climate, all the quadrupeds of Europe might be reared to advantage,

and brought to equal perfection as in the more northern regions.

Fowls are here in abundance, and easily reared, from the quantity of vegetables and fruit with which the country abounds. Of small birds this island possesses a great variety, of which may be particularly enumerated, chaffinches and canaries. The canary is generally here of a grey colour, but now and then is yellow, being of a mixed breed, perhaps owing to tame white ones having from time to time made their escape from the cage. The swallow is also here in great abundance, at certain seasons; and a grey bird, with a black head, which the natives call *tinto negro*, and is greatly admired for the beauty and melody of its note. Rock and wood pigeons are also here numerous; the latter is of a much larger size than in other countries, and much esteemed for its delicacy as food.

Fish, the next class of animals to be noticed, is in this part of the world in great variety, and in favorable seasons the market is plentifully supplied with them. Of the large kind, the most esteemed are the *taō* fish, caught in deep water by the line, which is sometimes of a great size; the grey and *sur* mullet, which are taken by the net; the *salmoneto de alto*, a

very scarce and delicate fish; the dore, pargo, and abrato, or nape; the piscado, or pike, anchovy, and tunny. Of small fish, there is the same variety caught at all seasons, in the bays or harbours. Some however come more frequently in shoals, as the mackerel, pilchard, and mullet, at stated periods of the year. Of the fresh-water fish, there is only the eel: the rivers are here too rapid in their course to admit of any other. Of the shell-fish, the lobster, crab, shrimp, periwinkle, and lampern, abound here; as also that delicate fish, called by the natives *craco*, and the hawksbill turtle, are in plenty at certain seasons. The hawksbill turtle, when of proper size, and kept for some time previous to use in fresh water, is certainly, if properly drest, not much inferior to the green species.

CHAP V.

View of the Inhabitants of Madeira.

After the observations on the natural history of the island, it may not be foreign to the subject, as an introduction to the remarks on its diseases, (to be afterwards offered), to take a

brief view of the temperament of body and mind peculiar to the natives, with their customs and manners.

The natives of Madeira, particularly the peasantry, are distinguished by an olive or tawny colour of skin, and a swarthy complexion; nor is it improbable that they are of a Mulatto or Moorish origin. Indeed only a few of the first families, at all resemble in complexion the fair inhabitants of northern Europe, and these are unequivocally of Portuguese extraction. The people of Madeira are, in general, athletic, well made, active, and of a middle stature. Those of the lower class, or the country people, are sober, inoffensive, economical, and capable of enduring much hard labour; in the prosecution of which they are often reduced to great emaciation of body, and debility of constitution, and thus a premature old age is brought on. The higher classes, on the contrary, are inclined to corpulence, and at the same time more disposed to indolence, attended with a moroseness of temper, and disposition to melancholy: though sober in respect to drinking, they are apt too often to indulge in eating to excess; from this circumstance, joined to the sedentary life they lead, they become subject to a variety of chronic disorders,

and also early arrive at a premature old age; nor is it to be concealed that of late years, the use of spirituous liquors has become common here among all ranks, which has opened a new field for the production of a long train of maladies.

Women here suffer more in their health than the other sex, for premature old age is the consequence of their early marriages and numerous offspring. They have often from six to twelve children in one family, and as they generally suckle, they often protract this task for two or three years, in order to prevent their having so numerous a progeny. Another source here of female disease, is the sedentary life women are forced to lead; for, except in the summer months, they seldom stir out, except to go to church, or in a moon-light night, and on both these occasions they are accompanied by attendants. Their rigid abstemiousness also from animal food, as a religious duty, on fast days and during Lent, must prove very pernicious to their health: nor is the adoption of the monastic life by females less to be censured; a practice here too common among the younger branches of the first families, and once adopted, or the veil taken, they never after are allowed to go without the walls of the convent, which

being a poor institution, and its regulations severe, its wretched inhabitants suffer all the inconveniences that generally attend want and poverty, added to the rigorous and dull monotonous course of religious exercise, they are unremittingly condemned to perform, "shut up as they thus are from the common air, and the common use of their limbs."

The temper of the Portuguese is impetuous and irascible; the slightest injury too often transports them to such a pitch of anger, as occasions in them serious if not fatal disorders. The practice of stabbing however, the stigma of the Portuguese nation, from time immemorial, is by no means common in Madeira, and when resorted to, which is very seldom, it is only by the lower classes, and seldom are they known to do any injury to strangers.* No nation is possest of more elegant manners, with a greater degree of courteousness, condescension, and contentment, than the Portuguese, although placed under an arbitrary govern-

* Since the arrival of the British troops, several instances of stabbing have been committed by the natives on the soldiers, one of which proved immediately fatal; it is to be lamented that the murderer has suffered no punishment as yet but imprisonment, as he cannot be tried for a capital punishment but at the court of Portugal.

ment, and subject to great oppression; to strangers particularly, their kindness and generosity overflow. The continuance of the practice of stabbing, may be ascribed, in a great measure, to the penal laws not being enforced as they ought, for death is here very seldom inflicted, even for murder. Interposition is made by some person, in favour of the criminal, by a form termed *empenho*; and when this *empenho*, or friendly interposition, is made by a lady, though the crime is of the blackest dye, it is considered a virtue, and even a point of honour, out of respect to the application, to protect him. This is carrying the remains of the system of chivalry to an extravagant height.

PART II.

CLIMATE OF MADEIRA.

HAVING detailed in the preceding part of this work, in a concise manner, the situation, natural history, and productions of Madeira, I proceed to consider what is deemed its chief excellence—the state of its climate, and the general course of weather prevalent at different seasons. This information is highly necessary for invalids, and will enable them to regulate their proceedings, in respect to their voyage to this quarter, when meant solely on the score of health.

CHAP. I.

Climate and Weather

The salubrity of the climate in this island, so highly extolled, is greatly attributed to the uniformity of its temperature. A regular succes-

sion of land and sea breezes, cool and purify its atmosphere during the whole year, and especially during the hottest months. Hence a drop of dew seldom falls, except in the higher parts of land, and any deleterious effluvia, which may arise from the surface of the earth, or from other sources, are dissipated as soon as they are produced.

During the summer months the thermometer ranges from 68 to 76, in the course of the day, its medium heat in the shade being from 73 to 75. In winter it ranges from 57 to 65, its medium in the shade being from 60 to 64, and during this colder season it only drops below 57, when the northerly winds prevail on the heights with falls of snow. It seldom also rises above 65, except when there are easterly winds. During the summer it sometimes rises to 80 and upwards, and during the prevalence of hot winds it stands even so high as 85.—Indeed during the *Sirocco* winds, it has risen at times to 130 and upwards, when the heat was sufficient in a few seconds to melt wax. The hottest time of the day, during the whole year, is between the hours of one and three, P. M. and the coolest period, a few hours after midnight. During the day the whole range of the thermometer will seldom at any season exceed two, or at most

four degrees, and frequently for several days together the same degree of heat is indicated. The meteorological observations from which these deductions on the subject of temperature are drawn, were made in the town of Funchal; but, in this, as in all other low situations, at all seasons of the year, the temperature is 10, 12, or more degrees greater than it is found to be in the higher parts of the island. Indeed every mile of ascent from Funchal, to the summit of the mountains immediately above it, shews the thermometer to fall four degrees. These situations, on account of the gradual rise, are at least three or four miles distant from each other.

Where such uniformity of temperature exists, combined with purity of atmosphere, and where such a pleasing variety marks the climate, one would conceive that the inconveniences of seasons would be unknown; and that neither the excessive heats of summer would molest, nor the colds of winter pinch the frame; but it is found that this pleasing picture is not entirely realised, and though it may be truly said, that in general, spring and autumn compose the whole year; yet it is not to be concealed, that during the months of July, August, and September, which are the hottest months, the heat becomes

excessive and intolerable, and that on one or two occasions, the winter has been distinguished by a severe storm. Still, however, the winter may be said to be known only perhaps by a gale of wind, which may drive the vessels in the roads from their anchorage, or by a torrent of rain, which produces a rapid flow of the rivers down the ravines.—In 1803 such a storm was experienced here, that for the destruction it occasioned deserves particular notice.

Betwixt the 30th of September and 8th of October, there prevailed constant rains without intermission. On the 9th of October, after a still hazy morning, during which the thermometer stood about 75, at half past ten A.M. the rain again commenced, and continued to increase without intermission during the day. At sun-set it began to fall in immense torrents, accompanied by flashes of lightning, uncommonly vivid, and by dreadful peals of thunder; a violent storm of wind also prevailed, and such a swelling of the rivers took place, that seemed to bear down every thing before them; for shortly they rose to such a height as to overflow their banks, when they impetuously swept away whole vineyards and other plantations, cattle, wine, stores, and the huts of the inhabitants, who, with their whole

families perished. Stones of immense size, as well as the largest trees torn up by the roots, were carried down by them, from the mountains to the sea. The remains of this dreadful flood are still to be seen along many of the ravines, in large patches of wood-lands and cultivated fields, which had been swept down there by the inundation ; while their original situation presents only bare rocks, and the neighbourhood around these rocks exhibits no marks of destruction whatever. At *St. Antonio da Serra* there is said to be a crater about three-fourths of a mile in circumference, surrounded by lofty mountains, covered by brush wood. In the superfices of this crater, there is now to be seen a large segment of its larger circumference, with brush wood growing upon it. This segment had been borne down into the bottom of the crater on this occasion, the former site of this piece of transposed land exhibiting, as in most other such instances, only bare rock ; while in the immediate neighbourhood, nothing more than the ordinary effects of rain are to be observed. But the greatest havock and devastation occasioned by the rivers, was in Funchal. Here, as in the twinkling of an eye, whole streets of houses, with their inhabitants, were swept into the sea, churches, bridges, and edifices of every descrip-

tion, were involved in the same general wreck, leaving hardly a stone or other vestige behind them, to be discovered on the following morning, when the storm abated. It is computed that no less than 300 souls perished on this occasion: such were the consequences of this storm; and the causes producing such a scene of destruction, were certainly adequate to the effect. The following nervous lines of Lucretius well apply as delineating such a picture.

Ac cum mollis aquæ fertur natura repente.
 Flumine abundanti, quod largis imbris auget,
 Montibus ex altis magnus decursus aquai:
 Fragmina conjiciens sylvarum, arbustaque tota;
 Nec validi possunt pontes venientis aquai,
 Vim subitam tolerare: ita magno turbidus imbri.
 Molibus incurrens validis cum viribus amnis
 Dat sonitu magno stragem; volvitque sub undis
 Grandia saxa, ruit qua quid quid fluctibus obstat.

Lucretii, lib 1. 272.

But still one effect of the storm, the transposition of large fragments and pieces of ground, is not accounted for, by the mere fall of rain, and swelling of the rivers. On this subject many absurd hypotheses have already been published, and the author finds therefore less difficulty in stating his opinion on this point: what he is

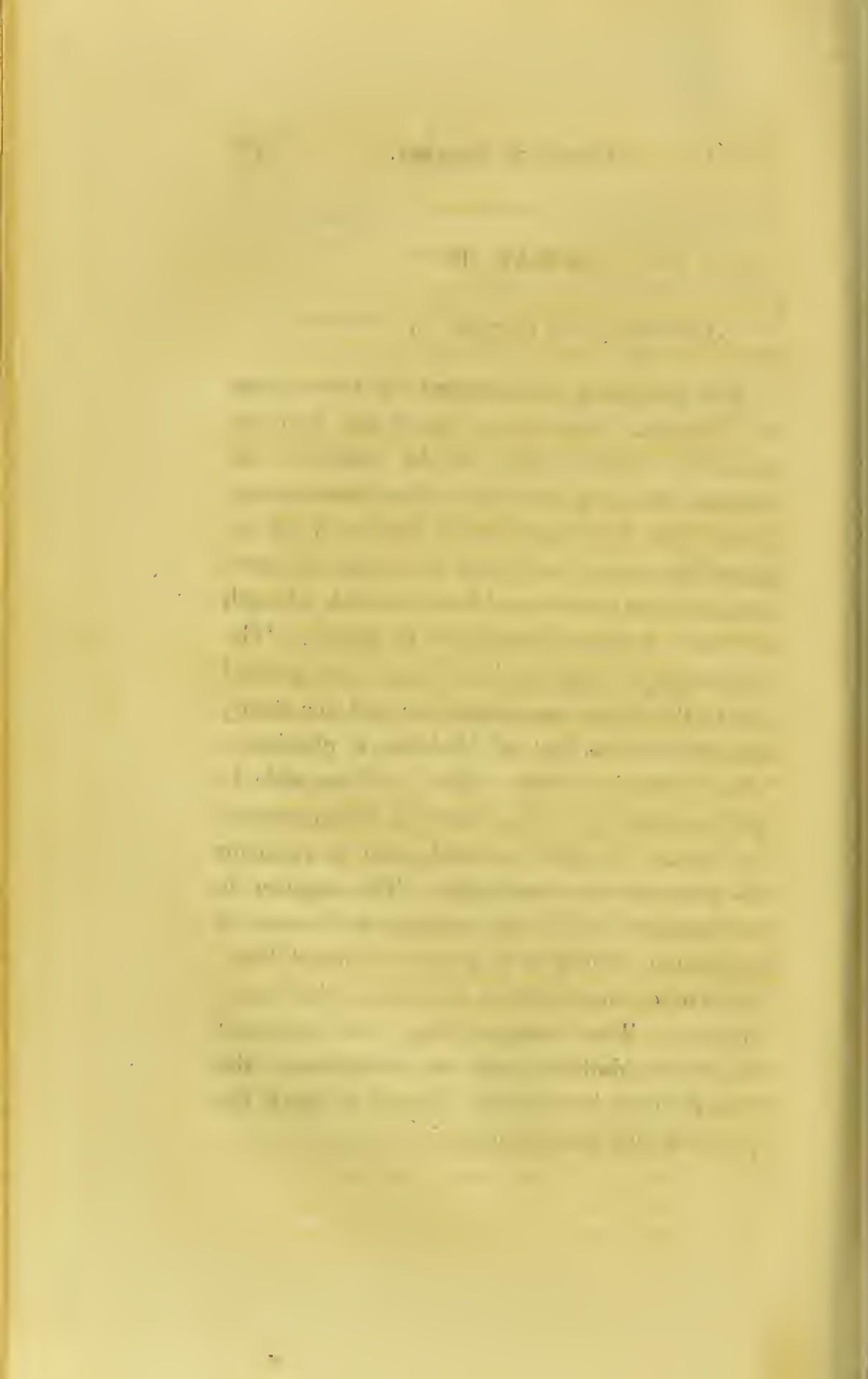
to state, however, must be considered as mere conjecture. This phenomenon, is, in his opinion, to be ascribed to the same cause, which produced the great increase of the rivers, and this cause, he apprehends, is to be looked for in the manner in which the water falls from the clouds upon the island. The general lowering appearance of the atmosphere, accompanying the phenomena in question, indicated an immense evaporation from the surfaces of the land and water, to have taken place in the heavens. This appearance was no other than that of immense clouds of vapour, which, during the thunder storm, had descended considerably below the summits of the mountains. In this low situation, and during the thunder storm, it is reasonable to conjecture that the clouds had become so concussed, charged, or otherwise affected by the electric fluid, and had further acquired such an additional increase from another mass of water, suddenly formed from the accidental inflammation of the superincumbent hydrogen gas, as to have become unable to continue longer suspended in air; but been precipitated, not in the form of rain, but of *cloud cataracts*, which cataracts were the cause both of the swell of the rivers, as well as the transposition of the lands.

In Madeira the coldest months of the year, are certainly January, February, and March; the winds then generally blow from N. NE, and in the mountainous parts of the island frequent heavy falls of snow are also apt to take place: this severe state of weather, during some seasons, continues occasionally to occur till the end of May. The other months are always attended by refreshing land and sea breezes, which at stated periods regularly set in, unless during the prevalence of the hot suffocating easterly wind, called *sirocco*; this wind visits the island for a few days at a time, twice or thrice every year, and at this time, the lower situations of the island are found the coolest and most bearable. The effects of this wind, on both animal and vegetable creation, are peculiar; in man it occasions diminished perspiration, succeeded by languor and general restlessness; in immediate exposure to its influence, the body is felt as if parched, and the air blows on the surface with a warmth like the blast from a furnace. In the same manner vegetables become dry and parched by it, and an interruption is put to their farther growth. So powerful is its effect, that even household furniture cracks and becomes warped by it.

CHAP. II.

Meteorological Register of Weather.

The preceding observations on the climate of Madeira, have been drawn up from an accurate account kept of the state of the weather, for a period of no less than sixteen years: this information thus derived from an unerring source, has been the result of much attention and labour, and kept for such a length of time, it cannot be subject to fallacy. The advantage of such registers has been pointed out by the writers on epidemics; and in a steady climate, such as that of Madeira, a physician, who is attentive to this subject, will be able to prognosticate the appearance and disappearance of disease, by this standard, and to regulate his precautions accordingly. The register is accompanied with some remarks on the state of vegetation, which it is proper to insert here, as corroborating the facts delivered in the former chapter. The vintage being the principal object in Madeira with the inhabitants, the remarks have been chiefly directed to mark the progress and changes upon it,



METEOROLOGICAL REGISTER.

State of the Thermometer, Barometer, Winds, and Weather, from January, 1793, to December, 1802, according to Observations made in the City of FUNCHAL, Island of Madeira.

THERMOMETER.			BAROMETER.			
1793	Highest. Deg.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium. Inches.
Jan.	66	55	61	30	3	29 $\frac{1}{2}$

Wind.—N. and NE. to the 20th—after variable from NW. SE. and E.
Weather.—Clear, cloudy, heavy showers and small rain.

The heavy rains of this month have greatly relieved the country, and enabled the people to sow their grain.

Feb.	66	55	59		30	3	29	9 $\frac{1}{2}$	30	$\frac{1}{2}$
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Wind.—N. and NE. alternately.

Weather.—Fair, clear, shady, cloudy, small rains, blowing fresh.

The spring very forward; orange trees coming luxuriantly out, and every other plant, though rather a want of rain.

Mar.	66	54	58		30	3	29	30	$\frac{1}{2}$
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Wind.—Most frequently NE. and N.—often NW.—sometimes E.

Weather.—Fair, clear, light showers, at times heavy rain, cloudy.

An uncommon quantity of snow lying on the mountains.
The crops variously talked of.

Apr.	69	55	59		30	2	29	2	29	3 $\frac{1}{2}$
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Wind.—Changeable from NE. to N. W. NW.

Weather.—Clear and shady alternately; heavy rains and showers.

This month, until latterly, has been accounted uncommonly cold and bleak, which has kept back the vines, and said to have hurt the budding grapes, by occasioning too rapid growth

THERMOMETER.			BAROMETER.			
1793	Highest.	Lowest.	Medium.	Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
May.	74	58	64	30	3	29

Wind.—Twenty-four days NE.—after E. and N.

Weather.—Clear, shady, cloudy, light showers frequently.

This month has been colder than usual, but there have come out a great shew of grapes, and nothing material happened to hurt them, though the cold keeps them back.

June.	74	63	66		30	1½	29	9	30	3
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Wind.—NE. to the 17th—after N. and NE.

Weather.—Calm and breeze alternately, clear, shady, foggy, small rain.

The fog in the beginning of this month accounted to have hurt the vintage in the middle lands, especially where the vines were chiefly in flower; and the raw cold weather kept back things generally.

July.	81	67	74		30	1½	29	9	30	3
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Wind.—E. to the 11th—sixteen days NE.—one N. and NW.

Weather.—Clear with breeze, siroco wind calm, strong current to the east.

The strong hot wind which prevailed the beginning of this month, has injured considerably the vintage; the growth of the grapes apparently stopt, and the fruit falling from the stalks.

Aug.	75	66	69		30	1	29	9	30
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Wind.—Alternately NE. and N.—two days E.

Weather.—Most frequently clear, sometimes shady with light showers.

The vintage better talked of, even in the places accounted worst, so that no beginning is yet spoke of.

Sept.	77	66	73		30	2	29	9	29	1
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Wind.—Changeable from NE. to N.—one day NW.

Weather.—Clear, shady, small rains.

This month on the whole has proved very favourable for gathering the vintage, which has been desirably kept back; and though the grapes render not overmuch, the quality is expected to be uncommonly good.

	THERMOMETER.			BAROMETER.		
	Highest. Deg.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium, Inches.
Oct.	74	60	68	30 2	29 9	30

Wind.—NE. and N.—sometimes SW. and S.

Weather.—Clear, cloudy, frequent heavy showers and light rain.

The south vintage was principally over before the remarkably heavy rains, which happened towards the end of the month, which are accounted greatly in favour of the vines and country in general. The rivers never seen higher.

Nov.	72	60	65		30	2	29	$\frac{1}{2}$	29
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Wind.—N. NE. E. NW. W.—from the 23d to the 30th N.

Weather.—Clear, shady, cloudy, squalls, showers and small rain.

The early favourable rains have encouraged the commencement of country labour, which appears going on with uncommon spirit, especially as all the old wines have been bought up.

Dec.	67	56	58		30	2	29	4	30
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Wind.—Variable from S. NW. to W.—sometimes NE. and N.

Weather.—Clear, cloudy, much heavy rain, and frequent light showers.

From the abundant seasonable rains, the vines and plants of all kinds appear uncommonly healthy and vigorous.

1794.

Jan.	65	54	57		30	3	29	9	30
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Wind.—Sixteen days N.—Nine days NE.—after E. SE. and NW.

Weather.—Clear, cloudy, heavy showers, unsettled.

Accounted the coldest season for many years past, the snow has been constantly covering the tops of the mountains.

Feb.	69	59	62		30	2	29	7	30
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Wind.—Variable, chiefly NE.

Weather.—Clear, cloudy, sometimes blowing fresh, showers.

The cold weather that has prevailed kept back the vegetation, but the vines, trees and plants of every kind remarkably strong and healthy.

THERMOMETER.						BAROMETER.						
1794	Highest.	Lowest.	Medium.	Deg.	Deg.	Deg.	Highest.	Lowest.	Medium.	Inches.	Inches.	Inches.
Mar.	68	55	61				30	2	26	9	30	
Wind.—Most frequently N. and NE.—sometimes SE. E. and NW.												
Weather.—Clear, cloudy, much rain, blowing fresh, small showers.												
The season backward from the bleak cold weather which has generally prevailed, but the plants accounted strong and healthy.												

Apr. 72 59 64 | 30 2 29 8 30

Wind.—N. NE.—sometimes E. and NW.

Weather.—Shady, showers, clear, calm.

The country exceedingly in want of rain, for the grain crops especially, it having approached nearly to siroeo wind sometime past, which has brought every thing forward. The vines in many places in flower.

May. 77 60 65 | 30 2 29 8 30

Wind.—NE. to the 11th.—after N. E. and NE.

Weather.—Clear, shady, blowing hard, light rain.

The high wind in the middle of the month has done some harm in exposed places, but the expectations of the vintage are very sanguine.

June. 74 63 66 | 30 1 29 9 30

Wind.—NE. and N. alternately.

Weather.—Clear, shady, light rains, hazy.

However changeable the weather has been, and the destructive thick haze, which at times prevailed, may have hurt the very high lands, where the vines were yet in flower, great expectations are entertained of the general vintage.

July. 78 66 63 | 30 2 28 $\frac{1}{2}$ 29 1

Wind.—Nineteen days NE.—changeable from NE. and NW.

Weather.—Cloudy; most frequently clear and settled.

The vintage much forwarded by the hot weather which has prevailed, and expected to be very favourable in all respects.

THERMOMETER.

BAROMETER.

1794	Highest.	Lowest.	Medium.	Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
Aug.	79	69	73	30 2	28 $\frac{1}{2}$	29 1

Wind.—Twenty-five days NE.—after E. and N.

Weather.—Clear; sometimes shady.

As the weather has been through the whole month favourable as could be wished, the vintage is generally well spoke of in all respects.

Sept.	76	69	72		30	2	28	$\frac{1}{2}$	29	$\frac{1}{2}$
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Wind.—Thirteen days NE.—twelve days N.—after E. NW.

Weather.—Clear, cloudy, light showers.

The weather auspicious as could be wished for the vintage, which has encreased every way beyond expectation; in some parts treble.

Oct.	76	65	68		30	2	29	8	30
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Wind.—Most frequently NE. and N.—five days NW.—three days E.

Weather.—Clear, shady, hazy, light rains.

The vintage finished in the north as well as the south, with the most favourable weather; since which, the continuation of drought is complained of.

Nov.	71	59	65		30	2	29	7	30
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Wind.—NE. N. NW. SW. E.

Weather.—Clear, cloudy, heavy rain, light showers, hail.

The rains which have fallen accounted by no means sufficient for many parts of the country, though enough to admit of labour going on.

Dec.	66	57	65		30	$2\frac{1}{2}$	29	6	30
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Wind.—Most frequently NE. and N.—often NW.

Weather.—Clear, cloudy, light showers.

Although a good deal of rain has occasionally fallen, it has not amounted to that abundance called for in the country, and required for planting.

	THERMOMETER.			BAROMETER.			
	Highest. D ^o .g.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium. Inches.	
1795 June.	75	62	67	31	2	29	30

Wind.—N. NW. most frequently NE.

Weather.—Variable, clear, cloudy, light showers with haze.

The uncommon coldness and uncertainty of the season much complained of. The grain, of which the prospect was very favourable, by no means answers expectation, and the grapes wear an unpromising aspect.

July.	76	63	67		31	30	29	1
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Wind.—N. most frequently NE.

Weather.—Clear, shady, hazy, light rain, breeze.

The vintage gives no sanguine expectations, but the higher lands in particular are extremely complained of, as bare beyond example.

Aug.	77	67	70		30	2	29	9	30
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Wind.—N. chiefly NE.

Weather.—Clear, shady, breeze; much thunder on the 2d.

Since the warm weather which has prevailed in this month, the vintage, in the lower lands especially, is better talked of than would be well expected.

Sept.	78	64	71		30	1	29	29	7
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Wind.—N. NE. sometimes NW.

Weather.—Clear, cloudy, light showers.

The south vintage chiefly over, and by no means favourably talked of in the general quality of the grape, has proved very short in the upper lands especially.

Oct.	74	64	67		30	2	29	6	30
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Wind.—Most frequently N. and NE. sometimes NW.

Weather.—Clear, shady, showers.

Though no adequate fall of rain has taken place with us in the south, the northern vintage has been much annoyed by wet weather, which gives no favourable prospect of the quality, and there it has also proved short.

THERMOMETER.			BAROMETER.			
1795	Highest. Deg.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium. Inches.
Nov.	70	58	64	30 2½	29 7½	30

Wind.—Frequently NE. and N. sometimes NW. and SW.

Weather.—Shady, showers, hard squalls with rain.

The continued drought much complained of through the country, on every account, a greater danger of absolute want of bread of every kind than has been ever known.

Dec.	73	59	63		30	3½	29	6	30
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Wind.—SE. E. SW. NW.—from the 18th N. and NE.

Weather.—Clear, shady, heavy showers, windy and clear.

The rains which fell towards the middle of the month serviceable, but by no means adequate to the wants of the country, for the vines in many situations.

1796

Jan.	66	57	62		30	2½	29	5	30
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Wind.—NE. S. SW.—most frequently NW.

Weather.—Clear, shady, heavy showers, two days thunder, heavy squalls.

The rain which has fallen in the course of this month, though useful, has by no means been sufficient for the vines, in the strong grounds particularly, and in some places they are shooting out very unseasonably.

Feb.	67	53	64		30	3	29	6	30
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Wind.—Six days NW.—twelve days NE.—eight days N.

Weather.—Clear, shady, light showers—one day heavy rain.

The occasional falls of rain which have occurred, though serviceable, are not by any means equal to what the country requires. The vines accounted prematurely forward, though never thoroughly refreshed to the roots, and this has occasioned pruning generally more early than customary.

THERMOMETER.

1796 Highest. Lowest. Medium.
Deg. Deg. Deg.

Mar. 66 54 60

BAROMETER.

Highest. Lowest. Medium.
Inches. Inches. Inches.

30 2 29 7 29 8

Wind.—N. to the 8th—after variable from SW. NW. NE. to E.

Weather.—Clear, cloudy, shady—six days showers—two days heavy rain.

The heavy falls of rain this month have been acceptable; but the very cold weather is said to have hurt the vines, from the forward state they were before in.

April. 69 55 60 | 30 2 29 7 29 9

Wind.—Eighteen days NE.—sometimes NW.—from the 24th to the 30th NE.

Weather.—Clear, shady, cloudy—six days light showers—three days heavy showers—one day thunder.

The heavy rains which have fallen in this month, have abundantly made up for the past drought, but accounted out of time; and the cold have occasioned the vines failing in the formation of fruit, but running into wood. The crop of grain looked upon as very favourable on the whole. The spring uncommonly backward and severe.

May. 74 60 65 | 30 2 29 7 30

Wind.—Variable—most frequently NE. N. and NW.—two days E.

Weather.—Shady, clear—four days showers—fresh breeze.

Although part of this month proved warm, and favourable for the bringing forward the vintage, the greatest part has been otherwise, which occasions fears how it may turn out, in the upper lands especially.

June. 75 62 67 | 30 1½ 30 30

Wind.—Twenty-two days NE.—after N. and E.

Weather.—Clear, shady, hazy, light showers.

The very favourable weather which has on the whole prevailed this month, for forming the grapes, occasions the vintage to be better talked of, in the upper lands especially, than could be well looked for.

THERMOMETER.

1796	Highest.	Lowest.	Medium.	BAROMETER.		
	Deg.	Deg.	Deg.	Highest.	Lowest.	Medium.
<i>July.</i>	75	65	69	Inches.	Inches.	Inches.

Wind.—To the 14th N.E.—afterwards changeable from N. E. NE. to NW.

Weather.—Clear, shady, cloudy.

Though this month has proved on the whole favourable, yet the vintage is most inauspiciously spoken of; where there were the best shew of grapes, 'tis said, they have fallen from the stalks.

<i>Aug.</i>	76	66	60		30	1½	29	8½	30
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Wind.—Twenty-three days N.E.—thirteen days N.—and one day NW.

Weather.—Clear, cloudy, shady.

The weather has continued favourable during the whole month, and in consequence, the vintage is somewhat more favourably spoken of, but still as short and extremely poor in different places.

<i>Sept.</i>	75	62	67		30	1½	30	30
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Wind.—N.E. N.—sometimes E. and NW.

Weather.—Clear, shady, cloudy, and blowing with showers.

This month has on the whole proved favourable for the vintage, which falls generally short of even that of last year; though the higher lands, but begun upon, are the most plentiful, and may compensate.

<i>Oct.</i>	77	61	67		30	2	29	8	30
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Wind.—N. NE. NW. E. SE. S. and E.

Weather.—Cloudy, clear, shady, squalls, heavy rain with thunder.

The plentiful rains which have fallen this month, greatly in favour of the south generally, though some of the highest vintage suffered with that of the north.

<i>Nov.</i>	70	59	62		30	2½	29	7	29	9½
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Wind.—N. NE. NW. W. SW.

Weather.—Clear, light showers, cloudy, heavy rain, showers with thunder.

The abundant rains which have fallen, accounted favourable in all respects for the country—such have not happened for three years.

THERMOMETER.			BAROMETER.			
1796	Highest. Deg.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium. Inches.
Dec.	70	59	64	30	1	29 $\frac{1}{2}$

Wind.—Changeable—most frequently NW.—sometimes S. and SW.
 Weather.—Heavy showers, cloudy, frequent light showers—much thunder.
 Such a continuance of rough and wet weather never remembered, it has occasioned inconveniences, but accounted a happy forerunner.

1797

Jan.	69	58	61		30	4	30	1 $\frac{1}{2}$	30	1
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Wind.—S. NE. E. NW.—most frequently N. and NE.

Weather.—Cloudy, clear, light showers.

Every thing coming fast out; but the drought of this month is complained of on account of the grain, the ground being much crusted.

Feb.	70	60	64		30	3	29	8	30
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Wind.—Variable from NE. SE. SW. NW. W. to E.

Weather.—Clear, shady, cloudy, six days heavy showers, squalls, and light rain.

The frequent rains of this month highly favourable to the grain in particular—every thing coming fast forward—pruning generally earlier than usual, mostly finished in the month.

Mar.	67	53	60		30	3 $\frac{1}{2}$	29	5	29	9
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Wind.—Most frequently NE. and N.—often NW.—one day W. and SW.

Weather.—Nine days light showers, four days heavy rain; squalls and thunder; snow above.

The extreme and universal cold which has prevailed, has been hurtful to the first grapes come out, but the vines appear strong.

Apr.	69	75	60		30	3	29	8 $\frac{1}{2}$	30
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Wind.—Nineteen days NE.—ten days N.—one day W.

Weather.—Strong breeze, fair, shady, light showers, sometimes hazy.

The extreme cold of the spring has kept every thing much back, and even hurt the first shew of grapes; some fruit trees hardly shewing signs of life.

	THERMOMETER			BAROMETER.		
	Highest.	Lowest.	Medium.	Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
May.	72	59	65	30	1½	29 8½ 30

Wind.—Twenty-four days NE.—after variable from N. to NW.

Weather.—Clear, shady, cloudy, light showers.

This month has promised so favourable, that the hopes of an uncommon great vintage are most sanguine.

June.	73	62	67		30	2½	30	½	30
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Wind.—Nineteen days NE.—the remainder N.

Weather.—Clear, shady with light showers.

The cold which prevailed part of this month has proved hurtful both to the upper grounds, where the grapes were not yet formed, and to those further advanced; but on the whole great expectations obtain of the vintage.

July.	75	65	72		30	1	29	9	30
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Wind.—Twenty-four days NE.—afterwards N. and NW.

Weather.—Clear, shady, cloudy, sometimes drizzling.

Although this month has proved throughout favourable, the prejudice results from the cold, and bleakness of the last appears considerable.

Aug.	78	68	71		30	1	29	9½	30
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Wind.—Twenty-three days NE.—alternately N. E. and NW.

Weather.—Clear, misty, cloudy, dropping occasionally.

The whole of the month has proved favourable, and the vintage is again talked of as a good one, provided the weather keeps up.

Sept.	78	68	61		30	1½	29	8½	30
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Wind.—Most frequently NE.—often N.—once NW.

Weather.—Generally clear; sometimes shady with light showers.

The month on the whole has proved happily favourable for gathering the vintage, which is increasing beyond expectation, especially in the middle and upper lands.

THERMOMETER.			BAROMETER.			
1797	Highest. Deg.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium. Inches.
Oct.	77	69	72	30	1½	29 8½ 30

Wind.—Thirteen days N.—nine days NE.—after NW. SW. and W.

Weather.—Clear, calm, cloudy, showers and drizzling; some heavy rains.

The south vintage finished in the happiest manner, but from constant rains in the north side, a reverse was there experienced.

Nov.	72	60	65		30	1	29	7	30
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Wind.—S. SE. NW. W. E. NE.—very variable the whole month.

Weather.—Heavy rain; stormy, thunder. Five vessels lost. Light showers.

The very plentiful rain which have fallen this month, are every way favourable for the country.

Dec.	73	62	65		30	2	29	9½	30
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Wind.—Changeable from NW. W. SE. E. N. to NE.

Weather.—Light showers, cloudy, clear.

The extraordinary drought that has lately prevailed, threatens plants of every kind with a premature growth no ways desirable.

1798

Jan.	70	60	65		30	2½	29	9	30
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Wind.—NE. and N.—one day E.

Weather.—Clear, light showers, cloudy, fair.

The drought every where prejudicial and alarming.

Feb.	70	56	60		30	3	29	7	30
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Wind.—Most generally N. and NE.—sometimes E. SW. NW. and W.

Weather.—Light rains, fair, clear, windy and shady.

The rains which have fallen at different times this month, a great relief to the country, and serve to inspire new hopes, as well of the vines not prematurely coming to blossom, as of the grain crop yet proving favourable; and pasture being supplied for the cattle, of which there has been the greatest want.

THERMOMETER.						BAROMETER.						
1798	Highest.	Lowest.	Medium.	Deg.	Deg.	Deg.	Highest.	Lowest.	Medium.	Inches.	Inches.	Inches.
Mar.	68	54	60				30	2	29	5	30	
Wind.—Variable from N. NE. E. SE. W. and NW.—most frequently NE.												
Weather.—Fair, cloudy, light showers; sometimes heavy rain with thunder.												
The rains which we have had this month highly beneficial every way, but particularly to the pasturage.												

Apr. 71 58 60 | 30 1 29 6 30

Wind.—Most generally N. NW.—changeable from NE. NW. SW.

Weather.—Shady, light showers, drizzling, sometimes with squalls.

The uncommon degree of cold which has prevailed through the greatest part of this month, has proved detrimental to the vines.

May. 80 60 65 | 30 1½ 29 7½ 30

Wind.—Nineteen days NE.—six days E.—changeable from N. SW. to SE.

Weather.—Fair, clear, shady, cloudy, light showers, hazy all round.

The season, until these few days, not accounted favourable.

June. 74 62 67 | 30 2½ 29 9 30

Wind.—Twenty-three days NE.—variable from N. E. to NW.

Weather.—Calm, shady, light showers, clear.

The vintage nor no kind of fruit has come forward well. It seems difficult to account for the unfavourable appearance, but a degree of blight has seized every thing since the hot wind of last month.

July. 77 66 70 | 30 1 29 9½ 30

Wind.—Variable from NE. N. and NW. to the 20th—the remainder NE.

Weather.—Clear, hazy, shady; one day light rain.

The vintage very indifferently thought of in the south and low lands.

THERMOMETER.			BAROMETER.		
1798	Highest.	Lowest.	Medium.	Highest.	Lowest.
	Deg.	Deg.	Deg.	Inches.	Inches.
Aug.	80	70	74	30	1 29 8½ 30

Wind.—Sixteen days N.E.—thirteen days N.—the remainder N.W.

Weather.—Breeze, clear, shady and cloudy.

The weather having proved uniformly favourable this month, the vintage is better spoke of, the upper south lands and all the north especially.

Sept.	81	68	74		30	1	29	8½	30
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Wind.—E. to the 4th.—most generally N. and E.—sometimes SW. W. and NW.

Weather.—Calm, clear, shady, cloudy, light showers; one day heavy rain.

The vintage very defective hitherto, and even the quality precarious.

Oct.	80	65	71		30	2	27	29	9
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Wind.—Variable from N. NW. E. SE. SW.—W. to the 15th—NE. N. and NW. to the end.

Weather.—Clear, showers; one day heavy rain.

The vintage finished with little expectation of its proving good, excepting in the north, where the latter fair weather favoured it.

Nov.	73	59	65		30	2	29	7	29	9
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Wind.—Variable from N. NW. E. SE. and SW. to the 15th.—NE. N. and NW. to the end.

Weather.—Clear, showers; one day heavy rain and squalls.

The vintage finished with little expectation of its proving good, excepting in the north, where the latter fair weather favoured it.

Dec.	73	62	65		30	2½	29	6	30
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Wind.—Changeable from NE. N. NW.—generally NE.

Weather.—Fair, cloudy; one day heavy rain, light squalls and light showers.

The want of a sufficient fall of rain, for various parts of the country, complained of.

Wind.—Twelve days N.—sixteen days NE.—the remainder NW.

Weather.—Calm, clear, snow above, six days light showers, four days heavy rain.

The drought complained of very generally.

Feb. 72 58 67 | 30 3 29 7½ 30

Wind.—Variable from NW. N. NE. SW. to S.—generally NE.

Weather.—Clear, fair, cloudy, shady; four days light showers.

The recent heavy rains have served greatly to relieve the country, and to give a favourable prospect of the year.

Mar. 68 55 62 | 30 2 29 8 30

Winds.—Changeable from NW. N. and NE. to the 13th.—NE. to the 13th.—the remainder NW.

Weather.—Cloudy, hazy, clear; six days light showers; strong breeze. Things breaking but with much vigour. The wind hurtful.

Apr. 67 54 61 | 30 2 29 8 30

Wind.—To the 18th variable from N. NE. to NW.—generally NE.

Weather.—Fair, cloudy, seven days showers, breeze.

Good expectations entertained of the vintage, notwithstanding the cold which has prevailed, being considered rather as unfavourable.

May. 70 59 63 | 30 1½ 29 8 30

Wind.—Twenty-three days N.E.—six days N.—one day W. and NW.

Weather.—Clear and shady alternately; four days light showers, high wind and cloudy.

The high wind on the 5th complained of in high and exposed situations, yet the hopes are generally sanguine of the vintage; the vines are strong.

THERMOMETER.

BAROMETER.

1799	Highest. Lowest. Medium.			Highest. Lowest. Medium.			
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.	
June.	71	60	64	30	2½	29 8	30 1½

Wind.—To the 11th NE.—after variable from N. NW. to NE.—generally N. and E.

Weather.—Shady, clear, four days light rain, windy at times.

There has been less sun and warmth than could be wished to bring forward the grapes, in the higher lands particularly, where complaints, in consequence, prevail, but expectation good on the whole.

July.	77	71	73		30	1½	29	9½	30
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Wind.—Twenty-seven days NE.—after N. E. and NW.

Weather.—Clear, strong breeze, cloudy all round, light showers on the 27th.

Notwithstanding of the warm fine weather, of this month, the vintage is not well thought of, the grapes having from the cold spring come by no means forward, in a favourable manner.

Aug.	81	79	75		30	1	29	1½	30
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Wind.—Thirteen days E.—sixteen days NE. and two days NW.

Weather.—Clear all round, a few days shady, one day showers.

Notwithstanding of the intense heat which has prevailed during this month, the vintage is very backward.

Sept.	82	71	76		30	1½	29	9	30
-------	----	----	----	--	----	----	----	---	----

Wind.—Changeable from NE. N. NW. to SW.—generally NE.

Weather.—Most frequently clear; four days showers, cloudy, one day thunder.

The weather has on the whole been favourable for gathering the vintage, and continues to every appearance so; some of the lower lands better off than expected.

Oct.	80	64	72		30	1½	29	9	30
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Winds.—Generally NE. and N.—sometimes NW.

Weather.—Hazy, shady, six days light showers, one day heavy rain; blowing hard.

The south vintage finished with very favourable weather; and though in the north they were not quite so successful, there appears not great reason for complaint.

1799	THERMOMETER.			BAROMETER.		
	Highest. Deg.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium. Inches.
Nov.	76	61	63	30	3½	29 3 29 8

Wind.—Very changeable from W. NE. E. N. W. to SW.

Weather.—Clear, shady, eight days light rain, five days heavy rain, blowing much; thunder and lightning on the 22d.

The rains that have fallen in this month have given universal relief to the country, where work is going busily on.

Dec.	66	54	59		30	2	29	5½	30
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Winds.—Changeable from N. NW. N. SW. to W.

Weather.—Much heavy showers and continued rain, with frequent light showers; blowing.

The continuance of rain and bad weather has been greater than for a good many years past, but which is thought to lay the foundation of a fruitful season.

1800.

Jan.	65	55	59		30	2½	29	5½	29	9½
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Winds.—Variable from SW. S. W. to NW. to the 22d.—most generally NW.—to the end N.

Weather.—Cloudy, heavy rain, hazy and squalls; thunder on the 28th. Uncommon wet and boisterous weather has continued during the whole of this month, but not unfavourable for the country.

Feb.	65	55	59		30	1½	29	8	30
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Winds.—Variable from N. NE. E. NW. SW. to S. to the 20th—afterwards NW.

Weather.—Shady, fair, windy, light showers, rain and thunder on the 20th.

Every thing forward and coming out uncommonly strong; so severe a winter has not however been known for many years.

Mar.	67	53	60		30	3	29	4	30
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Wind.—Fifteen days N.—eight days NE.—changeable from NW. N. to NE.

Weather.—Fair, light showers, cloudy, snow on the hills on the 23d; breeze.

The month has proved favourable to the country.

THERMOMETER.			BAROMETER.			
1800	Highest. Deg.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium. Inches.
April.	67	56	60	30	3	29 8 30

Wind.—Alternately NE. and N.—one day NW.

Weather.—Clear, shady, light showers and cloudy.

The want of rain complained of for the grain crops; but the vines promise favourably in all respects, and coming fast into flower.

May.	70	58	62		30	1½	29	7	30
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Wind.—Variable—from NE. N. SW. and NW. to the 20th—but generally NW. afterwards.

Weather.—Clear, shady, cloudy, frequent showers, some heavy rains, and high wind.

The two or three windy days in the beginning of the month, and rains, are reckoned to have hurt the vintage in some exposed grounds; but the weather since has proved favourable as could be wished.

June.	72	62	66		30	1	29	7	29	9½
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Wind.—Alternately NE. N. SW. and NW. to the 12th—afterwards NE.

Weather.—Fair, cloudy, drizzling, windy—heavy rain on the 8th.

This month has by no means been propitious to our hopes of the vintage; wind and rain have been prejudicial, and the cold chilliness of the weather generally yet more so.

July.	76	65	70		30	1	29	9	30
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Wind.—Changeable from NE. and SW. to the 5th.—the remainder NE.

Weather.—Cloudy—one day light rain—clear.

Though the vintage by no means is allowed to promise being great, yet the lower and middling lands are tolerably well spoke of.

Aug.	77	66	68		30	1	29	8½	30
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Wind.—NE. NW. and E.—most frequently NE.

Weather.—Shady—heavy showers on the 3d—one day light rain and drizzily—clear.

The vintage in the middle and lower lands said to be better than was looked for: the rain on the 3d accounted serviceable.

	THERMOMETER.			BAROMETER.		
	Highest. Deg.	Lowest. Deg.	Medium. Deg.	Highest. Inches.	Lowest. Inches.	Medium. Inches.
1800 Sept.	77	66	69	30	1½	29 8 30
Wind.—Alternately NE. N. NW. and E.—most generally NE.						
Weather.—Clear, shady, light showers, windy.						
The month has proved remarkably favourable for gathering the vintage, which has increased beyond expectation in most places.						

Oct.	76	60	67		30	1½	29	8	30
Wind.—Changeable from NE. N. NW. W. S. SW. to SE. and N.									
Weather.—Fair, shady—twelve days showers—some heavy rain.									
The vintage finishing for some time—heavy rains are anxiously looked for.									

Nov.	71	58	63		30	2½	29	5	30
Wind.—Variable from N. NE. NW. SW. to W.—most generally NE. and N.									
Weather.—Fair, cloudy, frequent heavy showers, and light rains, blowing.									
There has been no adequate fall of rain to reach the roots of the vines, but a sufficiency for the common country labour.									

Dec.	64	57	60		30	3	29	7	30
Wind.—Generally NE. and N.—alternately NW. S. N. NE. and SE. E.									
Weather.—Clear, shady—light and heavy showers—snow on the hills.									

The want of rain universally complained of.

1801.

Jan.	67	52	58		30	2	29	9	30
Wind.—E. NE. NW. N. SE.—most generally NE.									
Weather.—Clear, shady—nine days light showers—blowing.									

An uncommon drought continuing to prevail, felt in every way.

THERMOMETER.

1801 Highest. Lowest. Medium.
Deg. Deg. Deg.

Feb. 65 52 58

BAROMETER.

Highest. Lowest. Medium.
Inches. Inches. Inches.

30 2½ 29 1½ 30

Wind.—SE. E. NE. N. NW.—generally NE. and N.

Weather.—Hazy at sea—blowing—heavy showers on the 13th—uncommon fall of snow on the 14th—five days showers and light rain—shady and clear alternately.

The rains which fell in the middle of the month has in some degree relieved the country, particularly as to the grain sown, but they were not sufficiently abundant for the vines.

Mar. 71 56 62 | 30 2 29 8 30

Wind.—E. to the 9th—NW. W. to the 15th—afterwards E. and NE. most frequently.

Weather.—Clear, hazy, light rain, blowing occasionally.

Notwithstanding the uncommon drought continuing, the vines are coming out strongly, but all else much burnt up.

April. 67 53 60 | 30 1 29 6 30

Wind.—N. NW. W. NE. SW.—most frequently NE.

Weather.—Cloudy, clear, blowing fresh, light showers, afterwards fair.

The occasional little rain in this month, serviceable in some degree still to the grain, and greatly so to verdure of all sorts.

May. 67 52 62 | 30 2½ 29 7 30

Wind.—N. SW. NW. W.—most generally N. and NE.

Weather.—Shady, showers, heavy rain, fair and clear,

The month has proved rather cold, and chilling for the vines; but the rain that has fallen has been serviceable to the grain and pasturage.

June. 73 60 66 | 30 2 29 9 30

Wind.—NE. N. NW. SE. E.—most frequently N. and NE.

Weather.—Clear, shady—six days light showers—breeze.

The crop of grain has turned out more plentiful than was looked for; but the vintage seems not to have come forward so favourably as imagined.

THERMOMETER.				BAROMETER.			
	Highest.	Lowest.	Medium.		Highest.	Lowest.	Medium.
1801	Deg.	Deg.	Deg.		Inches.	Inches.	Inches.
<i>July.</i>	75	66	69		30	1½	29 9 30
Wind.—	Twenty-one days NE. alternately—	afterwards NW. and N.					
Weather.—	Shady, clear, showers, dropping for three days.						
	The vintage by no means so well thought of as was looked for.						
<i>Aug.</i>	79	67	64		30	1½	29 7½ 30
Wind.—	Variable from NE. N. E. SW. NW. to W.						
Weather.—	Clear, shady, misty, dusky and dropping — on the 8th showers—heavy showers on the 20th.						
	The late rains not against the vintage, but not favourably thought of.						
<i>Sept.</i>	77	68	72		30	2	29 9 30
Wind.—	Most frequently NE. and N.—sometimes NW.—once E.						
Weather.—	Clear, shady—four days light showers, and one day heavy rain.						
	The vintage rather increasing in the lower grounds, but the upper promise poorly: the rain having gone off will not hurt materially.						
<i>Oct.</i>	76	64	72		30	1½	29 9 30
Wind.—	Twenty-one days NE. alternately—frequently N. NW. and E.						
Weather.—	Fair, clear—three days light showers—sometimes blowing.						
	The drought much complained of, as well on account of the vines, as the new made wines not fermenting sufficiently.						
<i>Nov.</i>	72	61	65		30	2	29 9 30
Wind.—	Variable from NE. N. to SW.—generally NE.						
Weather.—	Calm, breeze, blowing fresh, cloudy, eight days showers.						
	The continued drought highly prejudicial, threatening even the vines which appear sickly, but rain is only wanting on the south side.						

	THERMOMETER.			BAROMETER.		
	Highest.	Lowest.	Medium.	Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
1801 Dec.	70	58	62	30	3	29 8 30

Wind.—Changeable from NE. E. N. SE. SW. most generally N. and NE.

Weather.—Fair, shady, windy, cloudy, thunder one day, dusky, dark, three days showers and light showers.

The drought still continuing, to the inconveniency and prejudice of the country on the south side generally.

1802.

Jan.	65	51	58		30	3	29	5	30
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Wind.—Changeable from NE. N. NW. to W. to the 12th—after N. E.—generally NE.

Weather.—Cloudy, six days showers, heavy rain after, clear.

The rains that have fallen in the course of this month highly serviceable, yet in many parts more are called for.

Feb.	67	54	60		30	2½	29	7½	30
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Wind.—Variable from N. NE.—two days E.

Weather.—Fair and clear, a few days light rain, cloudy and windy.

The renewed drought is very alarming on every account; but what particularly presses on attention, is the absolute want of any kind of sustenance for cattle, in the south side of the island. In the north rains have been abundant.

Mar.	72	55	59		30	2	29	8	30
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Wind.—Changeable from N. S. W. NE. to E.—generally N. and NE.

Weather.—Fair, clear, four days heavy showers continued, eight days light rain, dark and cloudy, for three days blowing; much snow on the hills on the 13th.

The rain of this month a great relief, but not sufficient for the vines.

THERMOMETER.				BAROMETER.			
1302	Highest.	Lowest.	Medium.	Highest.	Lowest.	Medium.	
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.	
April.	67	54	61	30	2½	29	7½ 30

Wind.—Variable from NE. NW. NE. to E.—generally NE.

Weather.—Cloudy, clear, seven days showers, two days heavy rain, breeze.

Until within these few days it was apprehended that the country was suffering in all respects from drought; as far as respects the crops of grain and pasture there is now a better prospect,

May.	69	56	62		30	1	29	7	29	9
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Wind.—NW. N. and NE. to the 18th—afterwards variable from N. to NW.

Weather.—Fresh breeze, seven days showers, heavy rain on the 3d; blowing and cloudy.

The intervals of high winds have hurt the vintage in parts.

June.	70	61	65		30	1½	29	8½	30
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Wind.—N. NW. and SE.—most generally NE.

Weather.—Clear, heavy rain on the 3d, four days light showers, breeze and calm alternately.

The crops of grain, contrary to expectation, have proved in general uncommonly good. The vintage but indifferently thought of, in the low lands especially.

July.	73	64	69		30	2	30	1	30	1½
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Wind.—Two days N.—twenty-nine days NE.

Weather.—Calm, fair, shady, clear alternately; generally a steady breeze.

The vintage by no means favourably thought of, complaints of it more general than was imagined.

Aug.	80	68	73		30	1	29	9	30
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Wind.—E. NE. and N.—most frequently E.

Weather.—Clear, hazy, blowing, dusky sky, some rain on the 31st.

The late intense heats have served to force forward the vintage, but not in the gradual way, which would be more in its favour.

THERMOMETER.

1802 Highest. Lowest. Medium.
Deg. Deg. Deg.

Sept. 84 70 75

Wind.—E. NE. SW.—most generally E.

Weather.—Clear all round, cloudy, heavy rains with thunder, and hazy on the 26th. The thermometer exposed to the sun on the 11th rose to 120, and in a few seconds melted a piece of wax.

The weather has been very much against the vintage; from the occasional rains, and high winds, and it is feared it will prove a bad one.

Oct. 76 66 69 | 30 1 29 8½ 29 9½

Wind. E. NW. NE. N. SW. and W. alternately.

Weather. Calm, fair, and clear; three days heavy rain; some light showers; cloudy, breeze; much thunder on the 1st and 2d, after clear.

The prodigious fall of rain, in the commencement of the month, brought down the rivers in an uncommon manner, and they did much damage, otherwise serviceable.

Nov. 70 60 65 | 30 1½ 29 4 29 8

Wind. NW. W. N. and NE.—generally NW.

Weather. Clear, blowing; four days heavy rain; hail with thunder; light showers, cloudy.

The abundant rains that have fallen, serve to revive the country greatly, and recover the vines.

Dec. 63 52 57 | 30 1 29 6 29 8½

Wind. N. S. NW. and NE., most generally NE. frequently NW. towards the end.

Weather. Sixteen days rain; eight days heavy rain; hail and thunder on the 8th; squally and fresh alternately.

The uncommon fall of rain propitious to the country,

* * * * *

THE editor has taken the liberty of terminating here, the series Meteorological Observations. Their continuation for so long a period as sixteen years, afford undoubted proofs of the persevering

attention and unwearied diligence of the author; but it seems questionable whether the curiosity of any reader could overcome their monotonous sameness, which is augmented by the steady uniformity of a mild and temperate climate.

To afford the invalid a synoptical view of the average temperature, he is to expect, during every month in the year, in the island of Madeira, the following *Table* is inserted, taken from that masterly work, on the "Temperature of different Latitudes," by RICHARD KIRWAN, F. R. S.

" Madeira, Funchal, lat. 32°, 37. long. 17°. mean height of the thermometer for every month, taken from an average of four years' observations.

<i>Jan.</i>	64°, 18.	<i>July,</i>	73, 45.
<i>Feb.</i>	64, 3.	<i>August,</i>	75, 02.
<i>March,</i>	65, 8.	<i>Sept.</i>	75, 76.
<i>April,</i>	65, 5.	<i>October,</i>	72, 5.
<i>May,</i>	66, 53.	<i>Nov.</i>	69, 08.
<i>June,</i>	69, 74.	<i>Dec.</i>	65.

The following is the average temperature of Madeira, compared with that of London, for the whole year, as well as during the coldest and warmest months, which are January and July. Taking the average temperature of London at 1000, the heat of Madeira is 1319. In January 0559, July 1128.

PART III.

DISEASES OF MADEIRA.

THOUGH Madeira enjoys a mild atmosphere, and is not subject to those vicissitudes of weather, which affect the more northern regions, still, it is equally the seat of disease as other countries, and the forms of these are neither few in number, nor mild in their nature, a circumstance we should not have expected. Indeed the island, at times, seems visited by sickly seasons, the cause of which can as little be investigated there as elsewhere.

The diseases of Madeira, I formerly arranged into two divisions, as Endemic or Epidemic; of the former, some species are highly formidable in their nature and appearance; the latter, are generally very violent, though not of long duration.

I. ENDEMIC.

The endemic comprehend the various affections of the skin, under the names of Elephantiasis, Psora, Oucão, and Alfora; diseases of

the chest, as Catarrh, Pneumonia, and Phthisis; with other anomalous disorders, as Rheumatism, Asthmatic affections, Colic, Tetanus, Dropsy, &c. With the consideration of these, I shall now begin.

Elephantiasis, or Leprosy.

By this term is meant the real Syrian or Arabian leprosy, one of the most deplorable and loathsome diseases, that can afflict human nature. In this island, it is an old endemic, and no where does it shew itself under more distressing and aggravated forms. It is sufficiently established as an hereditary disease; and in one or two instances, it has appeared of a contagious nature: it is considered, for the most part, as incurable, and in only one instance did Dr. Heberden know it removed. It is most conspicuous among the lower classes of the island, where diet is confined to salt provisions, chiefly fish of the least nourishing kind. Where it attacks the more wealthy inhabitants, which is not so frequent, it is milder in its symptoms, and less loathsome in its appearance. Some idea of the disease may be formed from the following short description of it. It generally shews itself, by tubercles upon the face and

upper extremities, and sometimes upon the trunk of the body and penis. Ill-conditioned ulcers of the legs also take place, in some instances, attended with acute pain; large indolent glandular tumours occupy the upper and anterior part of the thigh. The fingers become contracted, and the feet hard and swelled. The fingers also, and toes, are occasionally destroyed by ulceration; the same disposition to irregular tumours and ulceration attacks the throat.

In those affected by the disease, previous to the age of puberty, the usual signs that mark this period of life do not appear. The beard, the usual sign of virility, is wanting; the hair is deficient on the pubes and scrotum, as well as on the axilla and breast. No desire prevails for the venereal passion: the voice preserves its puerile tone, and does not acquire the real strength and masculine expression. Even the testicles, not called upon for the exercise of their functions, gradually waste.

The same morbid state, that thus distinguishes the male, is no less extended to the female, in whom there is no increase or fulness of the breasts, no growth of the external parts of generation, no appearance of the menses, or hair on the pubes and axilla, and in

short no disposition to venereal intercourse. Even where the disease makes its first attack, at a much later period, the marks of sexual maturity, which are already established, gradually disappear, and are attended with impotence or very impaired powers of generation. Thus in the male, the testicles gradually waste, and the beard disappears; while in the female, the breasts as well as the external generative parts shrink, or lose their natural fulness in a remarkable degree. Even the hair falls off, and the catamenia, or courses, cease to flow.

These circumstances tend to shew the disease in Maderia, different from what is observed in other countries; for in its history, it is noticed by every writer, that the unhappy victims of its attack, are distinguished by an unsatiable desire for venery, which they cannot restrain; so that the influence of the disease, on the parts of generation, does not appear to lessen their functions; but, on the contrary, to increase the exercise of them. On the contrary, the reverse happens in Madeira, and the loss of the powers of generation, or their non-appearance altogether, with a corresponding want of evolution in the parts of generation, or their gradually shrinking, forms a leading character of the disease.

That this disease is unfortunately of a hereditary nature, physicians in general admit, and this hereditary disposition, it is further observed, is derived oftener from the father than the other parent. With respect to its being of a contagious nature, it is a matter of doubt, and the opinions of modern authors contradict it.

This subject is ably treated by Dr. Adams, in his work on *Morbid Poisons*, who denies the contagious principle of this disease; and in this sentiment, he is also supported by Dr. Thomas Heberden, who has written upon it in the *London Medical Transactions*. But notwithstanding these respectable authorities, there are some cases which clearly prove the contagious nature of the disease, and though this contagious principle may not exert itself on all occasions, still, these cases point out the necessity for pausing on this head, and taking such precautions, as may not unnecessarily expose the sound to the infection.

About thirty years ago, in the village *Ponta de Sol*, fourteen miles distant from Funchal, the capital of this island, it raged with all the violence of an infectious malady, passing from one family to another, and threatening to extend its ravages into the neighbouring coun-

try, till the governor took this prudent and wise step, of separating the healthy from the diseased, and preventing their interference with each other.

There are now in the Lazaretto, and out of it, two or three cases of man and wife labouring under this disease, where, to all appearance, a communication of the infection took place, from the one party to the other; and as a farther instance of the same fact, the present porter of the Lazaretto caught the disease himself, since he resided in the hospital. The mode of attack also, where it appears in those born of healthy parents, and who have themselves continued healthy, till after the age of puberty, or a more advanced period, much resembles the mode of attack, which distinguishes contagious diseases. It is ushered in with rigors and other symptoms of pyrexia, while at the same time there is no evidence of the presence of any other existing morbid cause. These circumstances acquire additional weight, from the observation that the disease uniformly assumes a more aggravated form in the Lazaretto, than where the patient is taken care of at home by his friends, even though the patient is introduced to the hospital on the first symptoms of the malady. This therefore

cannot be easily accounted for, unless by supposing a certain vitiated state of the atmosphere to exist, in this receptacle of the diseased, depending on the effluvia arising from the bodies of the sick. As, to counteract as much as possible the morbid state, every attention is paid in the œconomy of the place, to proper regulations, in respect to ventilation and cleanliness, and the diet is of the best quality, and in abundant supply. In confirmation of my opinion, I may here notice the change which often takes place in erysipelas, which in crowded hospitals becomes often an epidemic disease, and of a highly contagious nature, as is well known to every medical practitioner. Its prevention being only effected by removing patients to a distance from each other.

On the treatment of Elephantiasis our knowledge is hitherto very imperfect, and must, I fear, continue so, while our information concerning its nature is so uncertain and defective, and especially with respect to its contagious tendency. The removal of this uncertainty will be the first step to a discovery of a successful method of cure. In a few instances, I have been able to suspend the progress of the disease, by the use of mercury, in the form of calomel: but these cases were confined to its incipient state. In other cases,

I have tried the administration internally of the *Lacerta (Agilis)* or common lizard, so long ago as the year 1785. Of these I luckily had the immediate charge, and the greatest benefit was derived from this remedy. It is not, however, to be concealed, that it also at times failed; and the same result was observed, in the practice of several of the Spanish physicians, who made a similar trial of this remedy.

As a medicine, this reptile acts as a powerful stimulant on the living solid, opening the several excretions, and producing large evacuations, particularly by the skin and urine, which are at the same time not attended with any debilitating effect. By this mode of operation, it will be found to have the certain influence of arresting the progress of the worst symptoms of elephantiasis, if not the whole, and in many cases to have surprisingly restored parts, which for years had been morbidly enlarged, to their natural size, and even sensibility; though for that period they had continued in a torpid state. Its operation also seems to vary somewhat in different cases; at times the different secretions seem increased by it all at once, viz. the perspiration, urine, and saliva; at other times, merely an increase of saliva takes place. Diarrhoea was not an un-

common effect of its operation, but as noticed, and what would hardly be supposed, these evacuations produced no proportionate degree of debility. On the contrary, in every case, the appetite for food, and the natural strength and vigour continued unimpaired. One effect of its administration was at times to occasion vertigo or giddiness, but this symptom seemed merely a transient attack, and was never attended with any bad consequence. On what peculiar principle the active operation of this remedy depends, admits much conjecture. The viper, a reptile of the same structure, was considered by the ancients an infallible cure for leprosy, the active powers of which, were supposed to reside in its volatile saline parts. The form of administering this remedy, was that of pills of an ordinary size, (or about five or six grains each), into which it was made up with a little flour. In order to do it, the head, tail and legs were previously cut off, the skin removed, and the intestines taken out: of these pills, from six to twelve or more were given daily.

To illustrate this practice more completely, I shall subjoin a few of the cases, in which I gave it a fair trial, with the result which attended its administration.

CASE I.

Occurring September 25, 1785.

Maria Toaquina, about a twelvemonth before, in the eleventh year of her age, had been seized, after exposure to cold, with a violent inflammation of her face, of a purple livid appearance. This was succeeded, in six months after, by a number of small tubercles on the eye-brows, palpetree and alæ nasi, with a falling off of the hairs from the body. Her arms were also much tuberculated, and her father, according to her report, had died of leprosy. She immediately began the daily use of the lizard to the amount of one.

Its effect on the 8th, was to cause her to sweat profusely, and to pass daily four quarts of urine, since she begun its use. The swelling of the face is now evidently diminished, and the tubercles feel also softer. Her belly and appetite continue both natural.

On the 12th, the same effects of medicine continue, with an evident amendment of the disease.

On the 21st, the medicine is equally active, the secretions as hitherto, while the tubercles

and swellings on the face have disappeared, and the eye-brows have regained their growth of hair. She is now apparently cured.

CASE II. *September 1, 1785.*

Antonio, a labourer, of healthy parents, but of a melancholic temperament, in the fifty-second year of his age, about four months ago caught cold, when convalescent from fever. He was then suddenly seized with a violent inflammation of his legs, arms and face, of a purple and shining colour. The lobes of his ears, his lips, eye-brows and alæ nasi, were greatly enlarged, and there soon supervened on these parts, a number of indolent tubercles of various sizes. With these symptoms was next joined an eruption of chopped scales on his arms and legs, attended here and there with ulcerations of a florid matter, that discharged a quantity of thick yellow matter. These ulcerations particularly affected the soles of the feet. For some time back he had laboured under anæsthesia, or loss of feeling, and indeed a general torpor seemed to pervade every affected part. The integuments of the legs became, in the progress of the disease, so thick and hard, and their insensibility so great,

that no sensation was felt on being pricked with pins. His eye-sight also felt much impaired, and he had been seized occasionally with vertigo, accompanied with convulsive tremors. In short, every symptom of the disease was rapidly increasing. I prescribed for a raw lizard every morning, a gradual amendment soon took place. The indolent tubercles lessened, the ulcerations healed, and the itching of the skin diminished: his sight, which was much impaired, became restored to its natural perfection, and the sensibility of the system, which had been so completely lost, very much amended. The operation of the medicine was here attended with the same profuse discharge, as in the former case, and seems to point out that this action is necessary to its success; if not, it at least shews its powerful operation on the system.

CASE III.

A gentleman who had been in Mexico, and other parts of South America, and was acquainted with the success of the medicine himself, came to Madeira purposely to put himself under my care. This case was similar to the two former, in the leading symptoms, though it had not made so

much progress as the last. He began accordingly the same course of a raw lizard every morning. Its operation was attended with the same effect as in the former patients, and symptoms of amendment soon appeared to take place. But circumstances of business obliging him suddenly to leave the island, I had not an opportunity of knowing the result of this case.

To the above cases, I might add a great number more, in which I have prescribed the lizard with great advantage; but in all, the operation of the medicine has been the same, and the progress of the cure has proceeded in a similar gradual manner: but, I must not conceal, at the same time, that in many other cases I have been disappointed by it in producing a cure, even where I have increased the dose beyond the quantity stated, where its operation on the system has been full and severe, and where the cases were apparently not so bad as others, that had happily yielded to its influence. But besides leprosy, I understand, it has been given with much advantage, in Herpes, Chronic Rheumatism, Dropsy, and Scrofula. In one case of this last disease, which came under my knowledge, a child of fifteen years of age, affected with soft tumours in the neck; they

were considerably lessened by the use of this medicine, which shewed the like sensible effects, as in the cases of leprosy, in increasing the different secretions of sweat, urine, and saliva. ¶ Several other remedies may be here enumerated, that have succeeded in the hands of different practitioners, in counteracting the progress of leprosy. The arseniate of mercury has succeeded with Dr. Clarke of Dominica, in a number of instances. The nitric acid, has been proposed by others, as producing, if not a cure, strong symptoms of amendment. Indeed we may infer, that every medicine that possesses a powerful action on the skin, will be here of service; and in this view, antimonial preparations have been much used, and always with certain advantage, though not to the extent of curing. As a dryness, hardness, and at last rigid state of the surface, is always the fore-runner of this disease; those powers which immediately act upon it, independent of the system at large, cannot fail to be highly useful in accelerating the effect of any internal course of medicine resorted to. The warm bath, therefore, in all diseases of the skin, as well as this, has at all times been a powerful auxiliary; but in place of it, the application of the vapour bath,

where heat and moisture are combined, in their most powerful form, would certainly deserve a preferable trial as an auxiliary remedy.

That the leprosy is the consequence of a specific contagion, of a highly infectious nature, appears to me strongly confirmed, by the judicious precautions taken in the British West Indies. So much is the slightest appearance of this disease dreaded in that quarter, that the unhappy victim of its attack is deserted, even by his nearest friends; they are afraid to approach him, much less to eat at the same table, or drink from the same cup. This dread, so general in every island, can only proceed from a strong sense of its infectious nature, and a powerful conviction of that infection being of a very subtle and active kind. The precautions used, we are to consider as not the result of an ill-founded popular prejudice, since it is sanctioned by the practitioners of that country, and obtains among the best informed of the inhabitants. It is perhaps as ancient an endemic in the West Indies as in Madeira.

Where the vapour bath is employed, its action will be much assisted by the use of friction, and this operation, should be conducted, during the time the vapour is applied,

and while the surface is in a patulous and relaxed state, through the sound part of the skin ; a variety of substances may be thus introduced, in the form of ointment, or blended with an oily matter, to accelerate their entrance, and both the palliation of smyptoms, as well as the complete cure much accelerated.

LESSER CUTANEOUS AFFECTIONS.

Besides leprosy, there a few other cutaneous affections of a milder nature, very general in the island of Madeira. To these affections persons of all ages are subject, as well as in every condition of life.

Psora.

Psora or Itch is very prevalent here, among the lower orders as elsewhere, from their natural uncleanness, and the improper diet to which they are accustomed ; but it is particularly aggravated also, from an unfortunate popular prejudice, which prevents the application of external remedies, which are considered as injurious to health, and even, in their opinion, attended with fatal effects. Here the disease is allowed to run on, without any

means being employed to stop it, and numbers even carry it with them to their grave. In many cases it proves of so exasperated a nature, as rather to resemble herpes than itch.

Oução.

By this term is understood an inveterate species of the former disease, more frequent in its attacks in infancy, than at an after period, and even so early as while the child is at the breast. Its appearance is first about the ankles, toes, wrists, and fingers, whence it generally spreads over the whole body. The name oução, is given it by the natives, and its origin proceeds from small animalcules piercing the skin, which render the disease highly infectious. This cause is so evident, that a delineation of one of the animalcules may be seen in Dr. Adams's Work on Morbid Poisons; and the learned author observes, that it possessed the power of leaping, when he first saw it, with a force equal to that of a flea. It is perfectly visible to the naked eye, is somewhat larger than a cheese mite, and belongs to the *genus Acarus* (*Siro Exulcerans* of Linnæus.)

The first appearance of the disease, is in the form of a pellucid watery vesicle, attended with intolerable itching, and which, on being rubbed, breaks and discharges a thin watery fluid. A crust or scab is afterwards formed, from under which there is again emitted an acid icherous matter. This matter corrodes the neighbouring parts, and tends to extend the disease, which is further assisted by the ova of the original infectious animalcules, and the locomotive power they are ascertained to possess. Thus it is conveyed over the body, and the eruption is soon rendered very general. Though this disease does not in general prove very formidable, yet it is often difficult to cure, and continues chiefly confined to the parts first affected.

On the removal of the animalcule, either by extraction, or such external applications as destroy it, the vesicle readily heals ; and the disease being more frequent among the children of the poor, than the richer classes, there is seldom employed by their relatives any other mode of cure, than *extraction*, by means of a needle or pin, an operation at which, from frequent practice, the mothers and nurses are very dextrous. But in the way of medicine, this affection readily yields to the application of

the mercurial and sulphur ointments ; at least, they are the remedies I have found used with most advantage to remove it.

Alfora.

From a similar cause of animalcular irritation is derived another cutaneous malady, known by the name of Alfora, from the small winged insect, which occasions it. This insect is about the size of the one described, as producing the itch, and the affection it entails is most troublesome during harvest, and immediately after it. From this circumstance, persons in the country are most liable to its attack. The seat of this affection in adults, is the ham and under the arms, and in children, it occupies behind the ears, and about the roots of the hair.

It commences with a sense of intolerable itching all over the body ; which is succeeded on scratching, by speckled swellings, resembling the stingings of nettles. When the skin is carefully examined, there appear on it numberless small vesicles, turgid with a liquid fluid, and in some places they run together. On breaking, these vesicles generally form a crust, and proceed no farther ; but in children, their conse-

quences are more severe, for they not unfrequently leave behind them sores, that discharge a vast quantity of a very acrid humour, and are often tedious and troublesome to heal. Though these sores occasionally occupy different parts of the body, yet they are more especially confined to behind the ears, and round the back of the head.

In this disease, like the former, *extraction* is the mode of cure preferred by the people themselves, and from the dextrous manner in which it is performed, they are generally successful. The great art is in having recourse to the operation before the animal has time to deposit its ova ; for after that period, the eruption becomes too general for this means of cure to be applied.

Herpes.

Herpetic eruptions are equally common here as elsewhere. Their origin may be traced to uncleanliness, and hence they are chiefly prevalent among the lower classes, who, from the habits and mode of life, are much disposed to be filthy. In this climate, they assume often a highly contagious nature, a circumstance to be particularly attended to, and made

known by a practitioner. The different metallic oxyds, either in the form of a watery solution or ointment, generally perform a cure; but perhaps it may be always proper to join, with such external means, a mild alterative treatment, which, whatever the cause may be, will never fail to be useful, as a measure of precaution. The combination of the oxyd of mercury and lead, will be found the most successful external application.

Sudamina or Prickly Heat,

Is a disease very frequent in all warm climates, and not less so, in the island of Madeira. It breaks out in minute papulæ, in different parts of the body, sudden in their appearance, and as sudden in their departure. In its most aggravated state, a cool regimen is only necessary, and here it is seldom so severe, as to stand in need of any medical treatment.

Essera.

The same may be said of the essera, which differs from the former by appearing in the shape of hard flat tubercles; and at the same

time it differs also from the urticaria, by the tubercles being larger. It requires as little medical assistance as the former.

Erysipelas.

Erysipelas is a disease here not unfrequent, and in the young, who are not so subject to it as more advanced life, it readily yields to the cool treatment. All persons once having this disease, are liable afterwards to be annually attacked by it; and in old people, it often attains that degree of violence, which constitutes carbuncle, and forthwith proves fatal, by suddenly terminating in gangrene.

AFFECTIONS OF THE CHEST.

After the diseases of the skin, I proceed to consider the pulmonary complaints of the island, as they attack under three forms, of Cattarrh, Pneumonia, and Consumption.

Cattarrh.

Cattarrh, or slight colds, are here as common as in the more variable climates of Europe; the slightest change of temperature, is sufficient

to produce an attack. It is, however, in its nature generally mild, and unless where a strong predisposition exists to phthisis, seldom terminates in that disease. Indeed the mildness of its nature requires here but rarely the interference of medicine.

The contagious catarrh or influenza of the northern regions, has occasionally paid a visit to this island. It has, however, assumed on these occasions, a milder form, and not been distinguished by the same exasperated symptoms, nor followed by the same alarming consequences, as when epidemic in Europe. Hence little aid from medicine has been found necessary in its treatment.

Pneumonia.

During the cold months of spring, pneumonic complaints are frequent in Madeira; for the same cause that produces catarrh, when more powerfully applied, will excite affections of the chest. These complaints are here sometimes ushered in by violent pyrexia, instead of that insidious and mild commencement of the attack, so conspicuous with such disorders in Europe. They are frequently also combined with typhus fevers, and in this state they form a

nondescript disease, the treatment of which is extremely difficult, as presenting such opposite indications. When its symptoms are very violent and rapid in their progress, spasms arise, which suddenly destroy the patient. These spasms much resemble the symptoms that are known to attend the peculiar affection, styled angina pectoris; though from the sudden attack here, and rapid progress of the symptoms, no suspicion of permanent organic change of that nature, which forms the cause of this disorder, can be supposed to have taken place. From this account, the treatment of pneumonia here can be regulated by no certain plan, but left entirely to the judgment of the practitioner, who will act according to circumstances.

Phthisis Pulmonalis.

Madcira, from its uniformity of temperature, and purity of atmosphere, has long been, and still continues to be, the favourite retreat of consumptive patients from the northern parts of Europe. Here the unhappy sufferers, under this formidable disease, cheat the winter of their own climate, and gain that cessation of suffering, which such a situation is fitted to produce. Yet still, though so highly beneficial in this

disease, with the natives of other countries, it is not to be concealed, that no malady is more prevalent here than phthisis, with the natives of the island. Persons of all ages, and of both sexes, fall victims to it; nay, whole families, have at times been suddenly swept away by it.

The species of the disease that produces these ravages here, is that connected with scrophula, a disorder equally common here as in the colder regions of Europe : * it uniformly at first assumes the appearance of a mild catarrh, but afterwards, when the real pulmonary symptoms commence, they prove more violent and rapid in their progress, than in the phthisis of northern climates.

But it is chiefly from the itinerant patients, who have been ordered here from Britain, my ideas of this melancholy disease have been drawn, and my experience in its

* Pneumonia has been known to terminate in phthisis, but only, I apprehend, in those cases, where there already existed a predisposition to the disease ; and where catarrh has appeared to produce the same consequence, it must have been under similar circumstances ; for there is scarcely an individual, who has not at some time or other had catarrh, yet, not one of 5000 has contracted phthisis, and where phthisis has occurred, it will be found only in those peculiarly predisposed to the disease.

treatment founded. In these patients I have remarked, that the disorder is of that species, which either arises from tubercles, and is connected with scrofula, or else is accompanied with a faulty confirmation of the chest. Before such patients repair to this *last haven* of health; their malady is unfortunately, in too many cases, in its last stage, when neither change of climate, nor any remedy whatever can be of service. From what cause this backwardness to an earlier trial of a southern climate proceeds, is not for me to determine, but it would be well if the physicians of such patients, were to recommend a change of temperature, in the first stage of the malady, where the tubercle is yet in the inflammatory state, or where, if suppuration has taken place, it is still in a slight degree, and the lungs have suffered little derangement in their structure and functions. It is then, and then only, a change of climate will be truly beneficial. Besides the advantage of the voyage itself can only be reaped by those who are able to bear its inconveniences, not by the worn-out victim of suffering, sinking under the last symptoms of emaciation and debility. Besides this favoured climate, even on their arrival, is not without its inconveniences to persons in their situation. The people of

Funchal, and indeed the natives in general, will hardly, under any circumstances, receive into their houses a phthisical patient, on the idea that the disease is of a contagious nature,* and in this they are confirmed, by the number of such patients who crowd here at one time of the season. But though winter in Great Britain is carefully to be avoided by the consumptive, summer is by no means unfavourable to this complaint. The proper period of such patients departing from their native shore, is the month of October, and under all circumstances in Madeira, the fittest season for invalids, is from November to the beginning of June. This was also the opinion of the late Dr. Cullen, who, in his Lectures on this disease, was wont to observe, in directing a change of climate, that it was as pernicious for phthisical patients to pass the summer in a very warm climate,

* A few cases have certainly occurred here, where the disease apparently originated from contagion. I have myself met with instances of husbands, to all appearance, communicating the disease to their wives, and wives to their husbands; but I have no doubt, in such instances, that the predisposition to the disease from tubercles existed. Whether or not this predisposition was excited to action, by the frequent inspiration of the vitiated matter, exhaled from the lungs of those affected, I cannot determine.

such as Madeira, as to remain in England in winter, and indeed that the most benign climate in such cases, was found in the south of England, and in the winter of southern latitudes.

I have hitherto confined my remarks to that form of the disease which may be *strictly* termed *phthisical*; but it appears also, in this climate, in another shape, that of *Marasmus*, or *Tabes Mesenterica*. This species generally shews itself in very infancy. Poor children, perhaps from the bad quality of their food, are particularly liable to its attack: its chief symptoms are an enormous belly, a pale ghastly countenance, great emaciation, and constant fever, with a dry rough skin. Such cases are generally connected and prove fatal. In all dissections of this species of the disorder, I have uniformly found the lungs full of tubercles, some of them in an indolent state, and others of them arrived at suppuration; while the mesentery and lymphatic glands were always at the same time affected. In one case, I recollect meeting with a cluster of these glands, swelled to the size of a child's head, while the others adjacent equalled the size of a pullet's egg, being greatly indurated. Worms and acrimonious scabs are also found in the intestines in considerable

quantity: the former are generally of the species of lumbrici, and it has occurred to me to see, in one or two cases before death, immense quantities of these worms voided in the form of large balls, connected together by tough slimy matter. These balls could be seen and felt on the outside of the abdomen, and there can be no doubt that these insects contributed to the death of the patient.

In cases of phthisis the mode of treatment I have found most successful, has consisted in the cautious administration of digitalis, with the use of those means that are suited to palliate distressing symptoms. On the subject of digitalis I have the greatest satisfaction in stating, that in almost every instance where I have administered this medicine in Madeira, I have experienced the most beneficial effects from it. In incipient cases of the disease, which generally occur only in my practice among the natives, I have very frequently obtained by means of it a perfect cure. Even in the advanced stages of the malady, where there not only prevailed purulent expectoration, but strong hectic fever, the usual state in which patients arrive from England, I have had great reason to be satisfied with its palliative powers, and a few of these instances I have certainly

cured by it. One constant effect of it has been, delaying for a time the fatal issue of the malady. Where the remedy therefore has proved unsuccessful, I attribute the failure more to the disease being allowed, from neglect and inattention, to proceed to that confirmed height when neither medicine nor climate could be of service, than to any inadequacy of its specific influence. This unusual success I ascribe, in a great measure, to the concomitant advantage in the benignity of the climate, and also to a constant attention on my part to palliate the uneasy symptoms. The most distressing symptoms in phthisis, are Cough, Dyspnoea and Pains of Chest, Hemoptoe, Anorexia, Hectic Sweats, Costiveness, and Diarrhoea.

Cough.

The cough accompanies almost every stage of this disorder, and ought to be particularly attended to, for whatever steps are taken to relieve it, serve always more or less to mitigate the severity of the disease. The medicine I have generally experienced here most serviceable is opium, either exhibited in the form of draught at bed-time, or combined with some mucilaginous substance, as a solution of gum

arabic or tragacanth, and given in the form of mixture at repeated intervals during the day. The good effects of such a combination, I always considered as much increased by the addition of a little of the tincture of digitalis. Where fever accompanies the cough, to this mixture I add a small portion of the tartarised antimony, and prescribe to be used along with it the saline julap ; or, in place of the latter, in order to give a free determination to the skin, I combine with the original anodyne mixture, a proportion of squill vinegar ; or else give a pill, composed of squills, calomel, ipecacuan, and opium, which is particularly serviceable in cases attended with little expectoration. Instead of opium, where the skin is not very hot, I prefer the paregoric elixir, either given in the form of draught, or combined with the former pectoral mixture ; and in cases where this symptom of cough seems to depend merely on what is termed morbid irritability, I have often recourse to the narcotic influence of the hyoscyamus and cicuta, or to the astringent powers of the uva ursi.

Dyspnœa and Pains of Chest.

These symptoms, which so generally attend the disease in every part of its course, often

require great experience to discover their true nature, and to remove or palliate their severity. Where they occur at an early period of the disease, and are connected with a fulness of the pulse, and other marks of a purely inflammatory nature, then bleeding may be necessary, with the assistance of cooling laxative medicines, and the topical application of blisters. But it happens more frequently, that these symptoms appear in the advanced progress of the disease, when debility is the predominant symptom, and when they evidently partake of a spasmodic nature. In this case, though they are accompanied sometimes with a hot skin, and quick pulse, yet antispasmodics form the leading indication, and of this class, opium is the best. Its effect is here to be assisted by topical means, as the application of leeches and small blisters to the chest, and the occasional use of cooling purgatives. These symptoms are found at times to be aggravated, by the presence of wind in the stomach or bowels; but the latter circumstances are relieved by the same means now recommended. Some idea of the cause of the pain, may be drawn from the progress of its attack. If it shift, and exist only in a slight degree, then it may be generally conceived to be some affection of the intercostal muscles;

but if it is very acute and fixed in its seat, then it must proceed from an inordinate contraction of the muscular fibres of the pleura. In this latter case, I have generally discovered on dissection, strong adhesions of the lungs to the diaphragm and ribs, by means of tendinous cords; and these, it is natural to suppose, must have been the source of the acute pain felt by such patients. Here blisters and embrocations are the only useful local remedies.

Hemoptoæ.

The course of the disease is often marked by the occurrence of this symptom, and when it appears in the latter stage, it is always an alarming circumstance; for it frequently at this period proves the sudden cause of dissolution. Hence it requires the most prompt use of means, and as it seldom occurs in the form of active hemorrhage, bleeding is rarely advisable. Practitioners are here apt to be misguided by the uncommon degree of tension so frequently felt in the pulse; but this depends on mere irritability as its cause. Here the use of digitalis is highly successful, particularly if accompanied with the application of blisters to the side, and the occasional administration of cooling

saline laxatives. These remedies may be farther assisted by the saline julap with nitre, having in it a portion either of tartarised antimony or laudanum. Should the hemorrhage prove excessive and continued, joined with evident marks of debility, then the infusion of roses, with the sulphuric acid, and perhaps laudanum, is to be frequently administered. The opium, in a solid form, will be also serviceable.

Anorexia.

" This symptom, though chiefly confined to the latter stage, sometimes attends the whole course of the disease. It is one highly distressing, and I have found it best relieved by bitters, particularly the quassia, columba, and angustura bark, which may be joined occasionally with aromatics; and should a predominant acidity attend, then a small proportion of kali will make a valuable addition.

Hectic Sweats.

These are always an alarming symptom in this malady, and often exhaust the patient so much, that he is ready to sink under them.

Besides they are difficult to combat. The sulphuric acid with bark, I have occasionally found serviceable, and great benefit I have also derived from causing the patient to wear a flannel shirt, and sleep at the same time in blankets.

Costiveness.

This is both a troublesome symptom, and also apt to increase every other. The most effectual means for its prevention in my practice I have found to be the occasional administration of some saline purgative, as the sulphat of magnesia, the soda phosphorata, or some laxative electuary; for more active purgatives are seldom necessary.

Diarrhœa.

No symptom is so alarming in this malady, as the colliquative diarrhœa, which marks its advanced progress. It is distressing to the practitioner, and if not carefully attended to, it will soon carry off the patient.

When it is slight, and shews a prevalence of acidity in the first passages, the chalk mixture with laudanum will be of service; or, where the laudanum disagrees, the extract of white

poppy, or the compound spirit of vitriolic æther, given in the quantity of a dram, or two drams, twice or thrice a day, may be substituted. But in general absorbent medicines are too insignificant to check this symptom, and astringents must be had recourse to in preference. The most useful and elegant form of the latter, I have found to be the following:—

- R Confec. Catechu. ʒ fs.
- Aq. Cinn. Simpl.
- Fontis. a ʒ ii.
- Spt. Ammon. Comp. ʒ i
- Tinct. Opii. gutt. C.
- Sirup. Symp. ʒ fs. M.
- Sumat. ʒ fs. urgente Diarrhoea.

To this mixture, I occasionally add a little tincture of kino, and with it I find it useful to administer at times a dose of opium in a solid form.

Regimen.

In the treatment of no disease is an attention to regimen so necessary as in consumption. In the first stage of its progress, and so long as there are no very obvious symptoms of debi-

lity, the most strict antiphlogistic plan ought to be observed, and scrupulously adhered to. In Madeira, however, it is often difficult to procure the articles of diet, which form properly this system. In my own practice, I generally recommend a milk diet, and where it can be had, I give a preference to ass milk, though it is difficult to procure, from being both scarce and dear. Cows and goats milk, is only to be had in abundance, and this is chiefly to be depended on. To obviate the debility, however, which is a prevalent symptom in this disease, and always to be guarded against; I find it necessary to allow once a day a little animal food, of easy digestion, which is in proportion to its alkolescency. Hence game, chicken, and fresh fish are the articles I recommend. In these cases, the best drinks are barley water, toast and water, or almond emulsion; and if the bowels are regular; lemonade or orangeote,—spirituous and vinous liquors of all kinds are to be strictly avoided, and wine is indeed only admissible, where there is no frequency or fulness of pulse. Where much debility prevails, with exhausting hectic sweats, and where the patient of course appears rapidly sinking under the disease, in these circumstances, a moderate use of it is necessary, pal-

liative, and indispensable to relieve the declining state of the patient. From the connection of phthisis, as already observed, with scrofula, mineral waters are a remedy, which promise much benefit in this disease. So long ago as the year 1791, I communicated to my friend Dr. Duncan of Edinburgh, an account of a case, which had been cured by the mineral waters of St. Miguel; but whether the cure was to be attributed entirely to the waters, or to the voyage, I cannot determine. I have known several other cases, which have received much benefit from the same remedy.

In all the cases of phthisis which I have dissected, the same appearances of tubercles and vomicæ have been conspicuous, as in those cases which have taken their origin in Europe.

ANOMALOUS DISEASES.

Under this head I shall offer a few observations on some remaining disorders endemic in Madeira—one of which is

Arthritic Affections.

Under this form may be considered, those wandering pains, and irregular muscular affec-

tions, which are supposed to arise from a gouty or rheumatic cause ; they are confined to persons advanced in life, and generally here, as elsewhere, baffle the powers of medicine. The regular Gout, is here a disease less frequent in its attacks than in Europe, the violence of its course being, perhaps, somewhat checked by the influence of the climate.

In the same manner, Rheumatism is oftener here in the chronic than acute form, and when it does occur, will not allow bleedings and that active treatment, which is necessary in the northern climates

Colic;

Is a common disorder in Madeira, and particularly among the lower classes. It often ends in Ilias, in which case its termination is generally fatal. Country people, from being overheated, and drinking suddenly cold liquids, are very subject to it. Excess of the use of fruit also may be noticed as a frequent cause of its attack.

Dropsy.

The lower classes in this country, when they pass middle age, are very subject to this complaint, which is generally attended with obstruc-

tion of some of the viscera. The low living of such persons, their hard labour, and exposure to every change of atmosphere, are sufficient causes to induce it, and as it generally marks a breaking up of the constitution, it is rarely entirely removed, though it may be palliated by the usual remedies for a time. Women about fifty, are here also the most frequent victims of it, and especially those who have devoted themselves to a monastic life, where low diet, religious severity, and the want of pure air, joined to a life of *single* blessedness, soon prey upon the health, and induce obstructions of the principal organs.

Hemorrhoids.

Hemorrhoidal affections are very frequent among those who lead a sedentary life. They are more frequently attended with a sense of weight, uneasiness, and pain, about the anus, than with dangerous discharges of blood. A variety of dyspeptic symptoms also often supervene, which, though of themselves seldom alarming, yet prove highly troublesome. Cases of this disease have likewise occurred to me, where the mere evacuation of blood by the anus, had nearly proved fatal. I have also seen the disease attended with periodical hæma-

temesis, where the blood vomited, proceeded without doubt from the hemorrhoidal veins. In some instances in my practice, I have had reason to be persuaded, that the disease proceeded from large tumors of the rectum, extending several inches upwards within the gut, and these tumors are apt in going to stool to produce prolapsus ani. I remember having been called to a case of this kind, where a number of such tumors had been extirpated, about thirty years before, by Mr. Hunter. From that period, the patient had been unaccountably subject to frequent prolapsus ani, and so great was it the day on which I was sent for, that the reduction was impossible. In consequence of this, in the course of a few days, an extensive sloughing of the villous coat of the rectum took place, when another tumor made its appearance, situated five or six inches within the gut. On the removal of this by the ligature, the patient, contrary to his most sanguine expectations, became free from every complaint. The parts recovered their tone, and thus, both the hemorrhoidal affection, and the prolapsus of the part disappeared. This patient happening to die a twelvemonth after of ascites, an opportunity was offered me of inspecting the gut. This I embraced, and found

the cicatrix consequent on the sloughing of the rectum, extend about six inches up the gut, occupying at the same time its whole circumference.

Epilepsy;

Is a frequent disease in this country, chiefly attacking children, and in general symptomatic of teething, worms, or acid sordes in the first passages. In one instance it appeared symptomatic of hydrocele. A gentleman, about forty, had been for some years subject to a swelling of the scrotum, which gradually attained the size of a young child's head. During this period he had repeated attacks of epileptic fits, which gradually increased in frequency. He submitted to the radical cure by injection, since which time, about a year and a half ago, he has had no epileptic paroxysm.

Among the poorer class of persons, who live very low, this complaint seems to be idiopathic.

Paralysis and Apoplexy.

These complaints are frequently the consequences of the too free use of spirituous liquors of a base and unwholesome kind. They generally attack persons advanced in life; apoplexy

proves in general suddenly fatal, while palsy conducts, by a more slow and complicated train of evils, to the grave.

II. EPIDEMICS.

In the preceding division I have treated the leading Endemics that occur in Madeira, and offered such remarks on their nature and treatment, as apply chiefly to their appearance and progress in that situation. Under the second, or next division, I am to examine the Epidemics of the island, which, though less frequent in their attack, assume a more formidable aspect when they do arrive, and take a wider range in their appearance. These all arise from a specific contagion. The first here, as elsewhere, to be considered is fever.

FEVERS.

So general is this form of disease in every country, that two thirds of mankind are calculated to fall victims to it, who are cut off by disease. In Madeira it is equally common as elsewhere, but generally mild in its nature, and seldom fatal, where treated with proper ma-

nagement. The typhoid species is the most frequent appearance it assumes, and the plan of treatment must be directed with a view to support the system, and obviate the consequence of putrescence. It is chiefly in the country where fevers are fatal, and where the old practice of bleeding prevails; there being no other medical assistance there, than the barber-surgeon can give, and with such practitioners, bleeding is in all cases the never-failing remedy. By such imprudence, fevers, however mild in their first attack, soon assume a serious aspect, and to this cause their fatality in this island may be attributed. In the towns, where the patients are under regular practitioners, and therefore properly treated, their termination is generally favourable, and warrants the conclusion I have stated with respect to this form of malady.

Scarlatina.

This formidable disease was the first time epidemic in Madeira, in the summer of 1806, and was attended with a fatality, which few diseases in this climate have displayed.

The characteristic symptoms which marked its attack, were inflammation of the tonsils, and mucous membrane of the fauces, attended

with extensive and repeated sloughing of these parts ; eruption of the skin, varied in its appearance, form and extent, in different cases, and great debility of the whole of the functions. The affection of the throat, however, was by no means a constant symptom, and the attack was as frequently without as with this appearance. Where it occurred, the affection of the throat, in some cases, completely resembled the Scarlatina Cynanchica, in others, the Cynanche Maligna.

The eruption also was often absent, and where it occurred, it was by no means uniform in its appearance. Still this variety proceeded all from one source, "*a specific contagion*," and was in every instance the same identical disease, however differently proportioned in distinct cases.

At its commencement, so contagious was the nature of this epidemic to appearance, as to be considered as the epidemic or contagious catarrh combined with quinsy, and in other cases, as measles ; and indeed from the very variable mode of its attack, though its nature soon ceased to be in the least doubtful to an experienced practitioner, still it could not fail, from its incipient appearance, to deceive one who looked only to the regular and usual form of scarlatina.

In many cases, for three or four days, delirium was the only symptom of the disease, attended with anxiety of the precordia, dyspnœa, palpitation of the heart, cough, bilious vomitings, œdematosus swellings of different parts of the body, and, in proportion to the violence of these symptoms, suspension also of sense and motion.

In other instances, the malady was ushered in by violent hemorrhage from the nose and mouth, attended with a quick feeble pulse, and occasionally frequent fits of syncope.

Children were the chief victims of its fury, while those who had attained twenty-five or thirty years of age, seldom felt its attacks. When they did, the symptoms in the throat were much more violent than in other cases, particularly if they were of a robust habit, and the appearances of the skin were at the same time generally absent.

The symptoms of the disease, when appearing in the true character of scarlatina simplex, were the following:

On the second and third day after exposure to infection, the patient was seized with violent shiverings, suddenly succeeded by increased heat, and this as speedily terminated in profuse sweating, or at least in a general moisture of

the surface. Head-ache then came on, succeeded by vertigo, anxiety about the precordia, nausea, with inclination to vomit, pain of the stomach, constipation, and paucity of urine. These symptoms were attended with a quick feeble pulse and lassitude. The face assumed a purple redness, with more or less œdema, extending towards the neck and breast; the extremities also, particularly the lower ones, became œdematosus, and shewed uniformly a bloated appearance. The third or fourth day, discovered the eruption first upon the neck, breast, belly, and thighs, and at length diffusing itself over the whole body, attended by the œdema of the face and extremities becoming also general. The form of the eruption varied in different cases: sometimes it appeared so pale, as to be discerned with difficulty; sometimes it consisted of such large red spots, as have been said to occur in this disease, and in the Scarlatina Anginosa. At other times, small distinct spots, brightly red, were visible, as appear in Cynanche Maligna. Sometimes the specked swellings of the urticaria shewed themselves, and not unfrequently pustules, like those of small or chicken pox. The malignity of the symptoms seemed to be proportioned to the degree of fever or pyrexia, and it was in these cases where much fever prevailed, that vibices

were observed. The skin at the same time having that rough inflamed fiery appearance, which, by writers on the disease, has not unjustly been compared to the colour of a boiled lobster.

Where the patient did not sink previous to the seventh day (which often happened on the 5th or 6th) the efflorescence came to its height, and soon after this period, began to disappear, attended with an abatement of febrile symptoms, and, in some places, a desquamation also of the skin, while the anasarca increased.

When the disease was about to assume the type of *Cynanche Maligna*, the patient generally complained first of an uneasy stiffness about the neck and throat, with difficult deglutition and hoarseness. Where fever was not already present, or had preceded these symptoms, it now commenced. A florid glossy redness appeared to occupy the mouth, velum pendulum palati, back part of the larynx, tonsils, uvula, and perhaps other parts of the fauces, which were covered also with crusts of a cineritious colour. The saliva seemed increased in quantity, which was at the same time more viscid than usual. The tongue was covered with a thick brown crust, and the breath felt hot and offensive. All these symptoms became greatly

aggravated towards the third day, by much tumefaction of the fauces, and their increased erysipelatous aspect. The difficulty of deglutition was also felt more severe, attended with head-ache, great sickness at stomach, anxiety of the precordia, extreme languor or coma, a feeble fluttering pulse, quick respiration, and sometimes delirium. About the fifth day, either the patient sunk under this aggravated state of the disease, or the affection of the throat beginning to subside, recovery took place, by the return of strength. In many cases, no eruption of the skin appeared at all.

But these varieties of the disease, already stated, however malignant, were comparatively mild to the anomalous form, which it generally assumed. In many of them death ensued on the second or third day, without the least symptom of the characteristic affections of the throat or skin. Here the predominant symptoms were, great anxiety about the precordia, extreme debility, drowsiness and frequent startings from sleep, delirium, convulsions, quick feeble pulse, and hot dry skin. In other cases, the patient just survived, till the affection of the throat and skin took place, when he died under the influence of these or similar symptoms. In such cases, the affection of the

skin, was really a general inflammatory state, without any regular appearance of eruption, and the angina only manifested itself, by the stiffness of the neck on motion, and the appearance of sloughs in the fauces. In a few cases, the patient died in twenty-four hours, of apparently typhoid debility, without any eruption, or any affection of the throat being discovered. In such bad cases, it was indeed only when the patient survived till the fourth day, that the disease was distinctly marked. In such situations it is also to be observed, that the affection of the throat, was seldom absent than the cutaneous eruption, which was frequently not to be traced. The internal fauces here generally presented a deep red colour, the sloughs and ulcers were very extensive, and the tongue and inside of the mouth were covered with numerous aphthæ. The secretions of the saliva and mucus of the nostrils, were either so thick, as to endanger suffocation, or so thin and acrimonious, that the lips, chin, cheeks, and neighbouring parts, became excoriated, and sometimes ulcerated. The discharge from the fauces was also in the same manner often extremely thick, and tenacious, and in such quantity, that the patient had no sooner spit out what was collected, than it became almost instantly renewed.

From these acrid discharges passing down the æsophagus into the stomach, violent looseness frequently took place, attended with tormina and tenesmus, which accelerated the fatal event. In certain cases, I was induced to think that this diarrhœa might be also produced, by an acrid matter of the same kind passed out from the mucous follicles of the intestines. Though the thirst of the patient was extremely urgent, the greatest aversion prevailed to quenching it, from the difficulty and pain of deglutition, and the attempt seldom failed to excite a spasmotic action of the muscles of the pharynx ; whence followed an aggravation of all the symptoms, and particularly the anguish about the heart, the most distressing of any. In all these malignant or anomalous cases, when the cutaneous efflorescence took place, it assumed all the various appearances which distinguished it in the milder forms. The desquamation in such cases often continued for a length of time. Even the nails, and entire skin of the hands and feet, often fell off. Vibices, of various sizes, at times supervened on the legs and thighs, and not unfrequently, after the desquamation was finished, a second pustular eruption appeared, in which the disease seemed more infectious than at any former period.

The appearance of both the angina and exanthema at once induced a bad prognosis. Here, the stomach was always much affected, and swellings of the parotid and submaxillary glands often supervened; in some cases to such a degree, as to have actually occasioned suffocation. In forming the prognosis in these cases, it may be observed, that when the fever suffered no abatement about the usual period of desquamation, but continued with unremitting violence: when the delirium was of the wild ungovernable kind: when the efflorescence was of a dusky hue, and the quantity of viscid matter secreted from the mouth and fauces much increased: when these parts appeared, at the same time, in a dry parched state, and of a blackish deadly hue: when the dyspnœa and difficulty of deglutition were also greatly increased, then the disease proved certainly fatal, and violent convulsions were the immediate precursors of death.

The common sequel of the disease was ana-sarca, and indeed, in almost every case, this morbid symptom supervened, when the disease had not already proved fatal. It proved also itself the cause of much fatality; its so frequent occurrence affording strong evidence of the power of this specific contagion, as well as of the violent

excitement which takes place in the system while under this disease.

In the progress of its course, this anasarca began generally in the lower extremities, then attacked the face, which appeared at the same time bloated, and at last dispersed itself over the whole body, attended with alarming vertigo, oppression about the precordia, frequent startings from sleep, often such inordinate or irregular actions as accompany St. Vitus' dance, and delirium. Convulsions and coma were the accompanying symptoms where it was to prove fatal. In about a week after the disappearance of the affection of the throat or skin, was the period of its commencement. Sometimes it immediately supervened, being merely an aggravation of the œdema, which already marked the progress of the disease. At other times, it was not observable till several weeks afterwards, when the patient had completely recovered from the disease, and had become as lively and well as usual. After death, in these cases, on inspection of the body, effusion into the cavities of the brain, precordia or thorax were generally discovered.

But this disease, however differently proportioned in its symptoms in different cases, seems in every instance to have been identically of the same nature, and to have proceeded from the

same source, a *specific contagion*. It is impossible to explain why, in different cases, the disease should have assumed such a variety of forms. The matter however being not new to us, it made no essential difference as to the mode of treatment. Every case that presented was treated with the same care and attention, as if it had been to turn out a case of the most malignant form of the disease, just as when small pox, or typhus, are epidemic, and when of course there are numbers of cases of typhus mitior as well as of typhus gravior, and of distinct as well as confluent small-pox; we, in every case that occurs, bestow equal attention, not knowing what may be the future form of the disease.

It may be observed also, that here, as in small-pox and other specific contagions, the infection was more violent from fomites, than when received from the human body, and even when received from the human body, that the period of desquamation rendered it stronger.

After these observations on the history and cause of the disease, I proceed to its treatment.

The disease being generally ushered in by pyrexia, nausea and vomiting, the use of emetics become strongly indicated, and these medicines afforded always relief, particularly where the

throat was much affected ; for, by the action of vomiting, even the disengagement of the sloughs was promoted. Nor did they tend less to remove that collection of viscid mucous, constantly secreted from the fauces, to which may be added, their emptying the stomach of any acrid matter lodged in it, and producing, at the same time, a gentle but general diaphoresis. Their repetition was found necessary, and certainly superseded the use of more active medicines.

The best emetic I generally found to be a combination of ipecacuanha and tartarised antimony, perhaps in the proportion of fifteen or twenty grains of the former, to one or more of the latter. Their good effects were greatly kept up, by administering the saline mixture, containing also a small proportion of the tartarised antimony.

The efficacy of cathartics was equally conspicuous in this disease. It was generally attended, as I have stated, at its commencement with constipation. The alleviating of this symptom seemed always to be of the greatest service. The patient was immediately relieved by it, from the more general oppression and other uneasy feelings. The same relief followed their repetition, at every period of the disease, and even in the convalescent state;

but it always required the most active medicines of this class, to affect patients in this malady. What evacuation they produced, was copious and offensive.

The best form of the cathartic, was the submuriate of mercury, or calomel, either by itself or combined with jalap. Ten grains of the former, with a somewhat larger quantity of the latter, were the ordinary dose for an adult, and five or six grains of the mercury were by no means too great a dose for children. Diaphoretics I found of little use, as such, and when at all of service, they were chiefly so, by inducing some nausea, promoting the discharge of acrid matter from the fauces, and operating by stool. But the internal remedy from which I experienced most benefit in this disease, was the sulphuric acid. Its beneficial effects apparently arose from its tonic and antiseptic qualities. I usually administered it in the infusum rosæ. The bark also, either by itself, or with the sulphuric acid, I experienced in some of the worst cases a valuable medicine.

Bleeding, in all cases of scarlatina, I ever found inadmissible; for though at first the excitement of the system was sometimes very considerable, so as to induce one to use the lancet, yet very soon, from the change in the pulse,

this was contra-indicated. Hence evacuations of every kind were in general assiduously avoided, with the exception of purgatives, which were only given in such doses as to unload the bowels of their morbid contents. Topical bleeding with leeches, was found sometimes useful, when violent inflammation prevailed, threatening suffocation. Blisters applied to the external fauces, or nape of the neck, often procured relief, though, from their producing much irritation, they were frequently avoided. Gargles were the principal topical remedy. They were much used, and proved highly beneficial. The gargle I chiefly employed, was an infusion of roses, with a little oxyginated muriatic, nitrous, or sulphuric acid. When with the latter, the same formula was employed as for internal use. When the ulcers were foul and very sloughy, the gargle was rendered more efficacious by the addition of a little borax or alum, tincture of myrrh or bark. When the secretion of the mouth was much increased, and the whole fauces loaded with tough viscid mucous, the steams of hot vinegar and water received into them, from their relaxing emollient quality, thinned the mucus, and rendered the excretion more free.

The only general remedy to be particularly noticed, is the affusion of cold water, or spong-

ing the face and hands with cold water and vinegar ; and this new practice, I am confident, would have been of much advantage, had it not been for the popular prejudice in this island so much against it. In the few instances where I had an opportunity of using it, the general febrile symptoms were diminished by it, the evening exacerbations cut short, the efflorescence abated, and no affection of the throat supervened.

I generally directed buckets of cold water to be thrown over the whole body, two or three times a day, and always during the hot stage. The patient, immediately after this operation, felt a pleasant glow all over his body, followed by a gentle relaxation of the skin. But the same effect generally followed the mere sponging of the body.

The treatment of the secondary or dropsical stage, demanded always the most prompt and vigorous means to be employed, from the sudden manner in which it supervened, and the violence of its attack, which rendered it often fatal. Here I found cathartics most useful. A smart dose of the submuriated murcury, or calomel, seldom failed to give relief, especially if followed by a timely application of blisters. Diuretics, as squill, or fox-glove, combined with

calomel, were thought to promote the effect of the latter. The fox-glove I often used by itself with manifest advantage; but when the patient was much debilitated, I experienced much advantage from it, if combined with the bark or chalybeates.

It now only remains to illustrate what I have said of this disease, to relate a few cases which came more immediately under my care.

CASE I.

Antonio Oyeiro, a sprightly boy, aged five years, after returning from school, where he had been exposed to the contagion of scarlatina, was suddenly seized with violent shiverings, head-ache, giddiness, sickness and vomiting, great oppression about the precordia, and delirium. I ordered him an emetic and purgative; but in spite of these medicines the symptoms increased with great violence, and contractions of the limbs, and general convulsions supervened: the latter became soon so severe, that in a few hours he expired, his face and extremities having assumed a deep purple or black colour.

CASE II. *August 8, 1806.*

Rosa, a girl, eleven years of age, was suddenly attacked while at play, in the morning, out of doors, with vertigo and head-ache, which caused her to run staggering into the house: these symptoms became soon accompanied with vomiting, and great anguish and oppression about the precordia. The symptoms on the 9th suffered considerable abatement; but next day recurred with double violence, attended with dimness of sight and delirium. The vomiting was incessant, of a bilious nature, with continual groanings and restlessness, to such a degree, that it required several persons to keep her quiet in bed. The evening exacerbations were severe, with an aggravation of all the above symptoms: there prevailed a constant low muttering delirium, difficult articulation, dry skin, the superior parts of the body feeling hot, with partial sweats on the forehead. The feet on the contrary cold, the pulse feeble and fluttering, with great thirst, and urine in small quantity. Notwithstanding the exhibition of various medicines, these symptoms continued with unabated violence, especially the great anguish, groanings and delirium; severe and fatal

convulsions supervened, which exhausted greatly her strength, as indicated by her very feeble pulse. On inspecting her mouth, the tongue appeared of the colour of ink, with several foul ulcers of the size of a six-pence about its root.

This case affords another strong proof of the virulence of this contagion. The patient, from the statement of the symptoms, had not a moment's respite till the hour of death. The appearance in the mouth did not occur till the last day of the disease.

CASE III. *September 24, 1806.*

Ludovina, a girl, aged seven, after returning from the neighbourhood where the scarlatina had been very prevalent, complained suddenly, towards evening of the 22d, of an uneasy stiffness about the neck and soreness in her mouth, attended with great difficulty in deglutition. The submaxillary glands were tumified, and these local symptoms were accompanied with vertigo, head-ache, occasional chilly fits, succeeded by heat, great thirst, and delirium, especially during the night. The fauces on inspection seemed greatly tumified, of a crimson colour, and covered with several grey coloured

sloughs, particularly the tonsils and velum pendulum palati: there was collected also a great quantity of viscid mucous; the tongue was foul and furred, and a mottled efflorescence appeared on the breast and arms, with slight œdema.— In these circumstances I prescribed as follows:

R Antimon. Tartarisat. gr. ii.

Aq. pur. $\frac{3}{2}$ iv.

Sumat $\frac{3}{2}$ i. omni semihora usquedum
vomitus ciatur.

R Rosar. Rubr. exsiccat. $\frac{5}{2}$ ii.

Aquæ pur. lb. i. coque ad lbss.

et colat: adde Acid: Muriat. $\frac{5}{2}$ i. pro
gargarism:

During the night of the 26th she was very restless and delirious; the tonsils were so much tumified as to be in close contact, and covered with several foul sloughs: the efflorescence and œdema were also increased, attended with a quick pulse, great heat, and thirst. The medicines were in the mean time continued. On the succeeding night the symptoms still increased, with great restlessness and delirium, the pulse being so high as 130; the swelling of the throat was also greater, and the efflorescence had in some places run into large red

clusters, the skin continuing hot and dry: the following alteration in the treatment was then made:

R Submuriat. Hydrargyr. gr. iv.
Conserv. Rosæ. q. s. ut f. bolus statim. s.

R Acetat. Plumbi ʒ ii.
Aq. distillat. ʒ i.
Aq. pur. lib i. faucibus externis applicetur.

Her face was also directed to be sponged frequently with cold vinegar, and the pediluvium to be used at bed-time. In spite of these alterations, the night of the 28th was marked with delirium and coma, with great restlessness and anguish about the heart, severe tightness about the throat, and difficulty of deglutition. On the right tonsil there appeared a large slough, a vast quantity of viscid matter, tinged with blood, was brought up by spitting from the fauces, while her mouth was dry and parched, and her lips excoriated; the efflorescence also was of a dark brown colour, and the pulse so high as 160; a blister was then directed to be applied to the neck, and the following medicines prescribed;

R Subniuriat. Hydrargyr. gr. v.

Conserv. Rosæ. q. s. ut f. bolus vesperæ s.

Continuentur Mixtur. Antimon. Tar-
tarisat et Gargarism.

Utatur vapor acet. calid. frequentur.

The disease during the 27th progressively advanced; it was marked by a restless delirious night, attended with great anxiety; a total inability to swallow took place; the fauces appeared black and parched; the nostrils plugged up with viscid matter; the extremities swelled; the eruption assuming a darker shade, and the pulse extremely frequent and small. In this unfortunate state the following was directed:

Injiciatur Ennem. ex. Decoct. Cinchonæ.
cum jure Bevino frequenter.
Utatur gargarism vini rubri.

She continued during the 30th struggling in great agony, and uttering the most doleful groans till midnight, when the whole body becoming convulsed, and she expired.

This is a third instance of the extreme virulence of the scarlatina contagion, and it exhibits one of the worst cases that has fallen under my observation.

CASE IV. *September 5, 1806.*

J. G. aged nine years, was the day before seized with vomiting, succeeded by frequent shiverings, and other symptoms of fever; he then complained of tightness about his throat and difficulty of swallowing, with great heat all over his body, a dry skin, and a full pulse at 135. To these symptoms was joined great head-ache, with a foul tongue, and great redness and swelling of the tonsils and uvula. I directed the patient in this case to be immediately taken out of bed, and put into a large bathing tub, where several pails of cold water were poured over him: this was repeated in the evening, and the symptoms of fever were considerably abated for the time; but still the progress of the disease rapidly advanced as in the other cases, and after a succession of similar distress, he fell also a victim to the virulence of the contagion.

The above cases are sufficient to shew the very formidable nature of this epidemic, which displayed in Madeira a degree of mortality beyond what is met with in Europe, and was equally fatal to the young, who were chiefly its victims, as the most contagious typhus, not excepting the yellow fever.

Cynanche Parotidæa.

This complaint has frequently appeared epidemic in Madeira. In general it manifests itself by the symptoms described by Cullen, "tumour affecting the testicles in the male sex, " and the breasts in the female." Other symptoms, not noticed by that writer, occasionally also occur, as swelling of the labia pudendi. I have also noticed anasarca swellings of both the upper and lower extremities, and of the neck, which sometimes extend over the whole body.

Dysentery.

This is a disease of a highly contagious nature, and when epidemic the peasantry are most subject to its attack. Autumn is the period of the year, when it is most apt to appear, and though excesses may aggravate its symptoms, they are not to be considered as forming the source of the malady.

The disease generally commences, like most other epidemics, with symptoms of general fever. The affection of the bowels then commences, distinguished by tormina, bloody stools and tenesmus. This last symptom, through the whole progress of the disease, is the most troublesome and painful to the patient. This inordinate action of the bowels, is the consequence of strong inflammation, and the disease therefore is properly divided into two stages; the stage of peculiar morbid inflammation, or active inflammatory contraction and spasm; and the stage of debility, or that atonic state which succeeds all inordinate action, when the cause is removed. This disease was particularly violent in Madeira, in 1800, among the British troops that had come to garrison the island,

and the different regiments lost each a greater or less number of their men, from this fatal epidemic.

The causes were evidently cold and moisture, joined with irregularities in diet, consisting in the too free use of wine and fruit, to which they had been unaccustomed.

These causes, in all cases, act more powerfully in a warm than a cold climate, and therefore sooner here laid the foundation for the production of disease. No disease, once produced, is so contagious as this, and it is only by a strict attention to avoiding the causes which induce it, and separating the healthy from any communication with the diseased, that its progress can be checked.

Though this may be done in private life, it cannot in military service, and hence, from the intercourse of the troops with each other, it spreads more among the army than elsewhere. The 3d, 11th, and 85th regiments were all affected with it, at the same time, and from Dr. John Ayres, surgeon to the 3d, I was favoured with a particular account of it, as the disease appeared under his care.

Hence in all cases in the first appearance of this malady, the system of prevention is the great step to be resorted to, and to employ

every means to destroy the specific contagion itself; and next, to guard against those circumstances, which may still exist, and the more readily act as predisposing causes.

In regard to the treatment of this disease, I hold it of the utmost consequence, that the proximate cause, the peculiarly morbid inflammation of the intestines be constantly kept in view; for it appears from dissection, to be in every case directly or indirectly the cause of death. That plan of cure, therefore, ought to be the best, which forms its indications from the view of removing this proximate cause. According to this plan, to remove the peculiar morbid inflammation, to unload the bowels, to relieve uneasy symptoms, and to restore to the intestines their healthy action, are the general indications to be formed. The best and most effectual means of answering at once all these indications, according to my experience, is the use of calomel alone. This medicine, exhibited in doses of six, eight, or ten grains, repeated at intervals, determined in their length of time by the previous effects of its action, and the other circumstances of the patient, has been uniformly found to unload the bowels, and to keep them open; to relieve the uneasy symptoms of tormina and tenesmus, and

even of vomiting, if present ; to raise the pulse, and remove that languid look, and general depression, so constantly attendant on this disease. To judge from these effects, the probability is that it also operates it some peculiar way, in a way, perhaps, analogous to its mode of action when applied externally to an ill-conditioned ulcer, upon the morbid inflammation of the intestines, so as to remove it. In regard to astringents and opiates, I have seldom found occasion for such articles, unless where the free evacuation of the intestines was neglected in the first instance, or large doses of such debilitating cathartics, as aloes, colocynth, jalap, rhubarb, or glysters containing acrid materials, had been administered for this purpose. Indeed, I have found calomel to be not only the best remedy in the beginning, for unloading the bowels, and relieving uneasy symptoms, but also in the latter stage, to be the best and softest anodyne.

The following is a return of the admissions and deaths from Dysentery in the regimental hospital of the 11th regiment, in the Island of Madeira, from the 1st of January, to the 15th

of August, 1808, as I was favored with it from the surgeon of that corps.

Admitted 561—died 16.

Total number of sick on the 15th of August 28.

Small-Pox.

The small-pox, when epidemic in this island, as they have frequently been, have swept off great numbers of the young, and particularly in the country, where the practice of inoculation has been opposed by popular prejudice. Of late years, however, this prejudice has considerably lessened, and the mortality from this disease has not been so great as at former periods. The introduction of the modern discovery of vaccination, promises to be here, as elsewhere, of the highest public utility, and from the experience I have hitherto had in it, I am ready to give it all the recommendation which it has been found to deserve in Europe. As yet the application of it is circumscribed; but by a due attention to the rules laid down in performing it, and a proper choice of the matter, I have not failed in a single instance in producing the disease, nor have any of my patients, though subjected to the contagion of small-pox, experienced any attack of that disease.

Measles.

This is a disease which is epidemic in Madeira, among children, as in other countries. The catarrhal symptoms are the characteristic marks of the malady, previous to the eruption, which assumes various appearances, most frequently that of a miliary eruption, and does not observe that distinct and regular form it displays in Europe. In this climate the inflammatory stage is very short, and soon succeeded by a degree of typhoid debility, from which the chief danger arises. A symptom that often occurs here, is swelling of the submaxillary glands, and this symptom sometimes proceeds to a disagreeable length. While therefore the disease in Europe is of a purely inflammatory nature, here the inflammatory stage is of short duration, and passes quickly into the opposite state; a circumstance material to be attended to in the treatment.

The treatment is to be conducted entirely according to the prevailing symptoms. Where the inflammation at the commencement runs high, the use of antimonials will be found of service, and to accelerate the progress of the eruption. Demulcents are highly useful against

the cough and other catarrhal symptoms; and when the diarrhoea comes on, it should not be suddenly checked. But in cases where the typhoid debility appears from the commencement, this plan of treatment must be varied. The eruption is here trifling, or appears under a miliary form, and in many cases it is even attended with petechiæ. Here evacuations are evidently hurtful. The strength of the system must be supported, and the diarrhoea prevented from assuming a dysenteric form, which in such circumstances it is apt to do. It is in this state the disease is chiefly fatal, and it is seldom known to assume such an appearance in Europe,

One of the most distressing symptoms in this disease, is the anorexia at its commencement, and the best method of relieving this, is by unloading the stomach freely by the emetic solutions. It generally goes off when the eruption comes out freely.

Measles are most dreaded in the colder climates, from the consequences they are apt to induce in scrofulous habits; but herethese consequences do not create any alarm, and it is more the active state of the disease that proves injurious, and even fatal, than any effects on the constitution, that are to be dreaded after its termination,

Pertussis or Chincough.

Chincough is a disease which is epidemic here, among the young, and is frequently so violent in its paroxysms, as to produce apoplexy. In the commencement of this malady, no remedy I found so serviceable as the use of emetics. A weak solution of tartarised antimony, generally suspends the paroxysms, and when the disease has continued some time, by the occasional addition of opiates, it is completely removed. It is rarely protracted to such a length of time as takes place in Europe.

Lues Venerea.

The venereal disease is here very frequent ; but, as in other mild climates, it is not in general so formidable in its symptoms as in Europe. Where bad cases occur, it is from neglect on the part of the patients, who are so inattentive to their cure, that with many the disease has been known to continue, without arriving to any formidable height, for the whole period of their lives.³⁷ Mercurry is here, as in Europe, the only remedy, and the climate is favourable to the success of its operation : it is seldom necessary to use more than an alternative course.

Diseases of Women.

The diseases peculiar to the sex are here common as elsewhere, particularly fluor albus, from the relaxing effects of the climate, and the indolent life to which females are subjected. Parturition, however, is in general here an easy operation, and not attended with those dangerous consequences which so often attend it in colder countries. The child-bed or puerperal fever, is seldom to be met with, and in general the curse denounced in Holy Writ, “in pain ‘‘ shalt thou bring forth,” may be said here to be partly done away; and it is so far fortunate, as the ignorance of the midwives here is extreme.

The observations I have in the preceding pages offered, respecting the Population, Produce, and Salubrity of the Island of MADEIRA, will, I trust, afford some grounds for forming a just estimate of the value of this island, in the possible contingency of its becoming an integral part of the British dominions, and what is more immediately my to purpose,

as a professional man, in publishing this work, will enable the invalid, or his professional adviser, duly to appreciate the advantages to be derived from a migration to this climate, in cases of impaired health, or existing disease.

APPENDIX,

CONTAINING

*A short Account of the MINERAL WATERS
in the Portuguese Island of St. Miguel.*

THIS short account of the Mineral Waters in the Island of St. Miguel, being formerly communicated to Dr. Duncan, of Edinburgh, was inserted by him in the Medical Commentaries for the year 1791; I now republish it as an Appendix to the present work, with some alterations suggested since that time.

Nearly ten leagues north-east from Ponta Delgada, the principal town in the Island of St. Miguel, is situated a small village, called the Furnace or Carcius, in a spacious valley, which is surrounded by high mountains: towards the south-east end of this valley there is a small elevation, called the Caldieras or Boilers; this elevation, which may be nearly a quarter of a mile square, consists of a number of hillocks, around which the action of fire is every where evident; in confirmation of which, is discovered

a variety of strata, pyrites, lava, pumice, marle and clay of different colours, ochre, iron ore, and calcareous earth, mixed with alum and sulphur.

It is in this spot a number of boiling fountains are met with; many of them warm, and others cold mineral springs. The hot waters form several streams, and some of these are of considerable depth. In their course they bubble, smoke, and emit sulphureous steams, so that in a calm day the vapor is seen ascending in curling volumes to a great height.

The largest of these boiling fountains, called the Caldeira, is about from 25 to 30 feet in diameter, and, according to the prejudice of the country people, who never sounded it properly, or perhaps never at all, it is said to have no bottom.

The water is scalding hot; and in a constant state of ebullition, continually emitting a vapor highly sulphureous, and smelling much like burnt gun-powder. It deposits a clayey sediment of a light blue colour: to the taste it communicates an acescent pungency.

At a few yards distance, behind a ridge of lava, there is another boiling fountain, situated in a cavity at the bottom of a projecting rock, emphatically called the Forga or Forge; this

fountain is second in size, and its surface is seldom visible, being concealed by a very dense sulphureous vapor. It boils with great violence, and emits a loud blowing interrupted noise, throwing up, at the same time, great quantities of a fine glutinous blue clay, mixed with vapor, which is scattered to a distance, and is observed to incrust the rock and other neighbouring objects.

At a distance the noise of these boiling fountains, resembles the sound of kettle-drums. Those described are the largest two, but there are many others, and vapor issues out in many places from the crevices of the rocks and banks. In some places, where it is scarcely perceptible, the noise of boiling water, on approaching the ear to the fissure, may be distinctly heard. In other places the water is squirted out at intervals, and actually scalds those who unwarily go too near them. In many places so hot is even the ground, that it cannot be stood upon without inconvenience and pain: it is also every where covered with crude sulphur, and a piece of bright silver, on being exposed to the air, is immediately changed to a gold colour. But the temperature of these fountains, is not all of the same high degree; some of them are of a moderate heat, and others are quite cold. The

appearance of the water in several of them is limpid and transparent, while that of others is turbid, of a whitish or reddish hue, and generally depositing a red or blue clay. Near the fountains chrys-tals of alum and sulphur, are found in vast abundance and variety; many of these productions are extremely beautiful, and at the spot where the vapor issues, and exudes from the chinks and fissures, some of the chrys-tals are two inches long. In some places the ground is of a soft clayey consistence, in others it is loose, dry and crumbling: on digging here there issues from the earth a strong sulphureous steam, of such heat that the hand cannot be kept in it above a minute. In a short time the hole is either filled with hot water, or else covered on the sides and bottom with a coat of sublimed sulphur or alum, resembling hoar frost. There are also some hot fountains close to the edge of a river, which runs through the valley, and even in the middle of the stream there is a perceptible ebullition: from these fountains, vapor and steams arise, as from the other fountains described. This river deposits also an ochry sediment on the stones and pebbles of its bed; in a few places this sediment is of a greenish colour, resembling martial vitriol. The plants and bushies on the banks, are en-

crusted over with sulphur, alum, and other matters. The taste of the waters varies; in some it is that of a strong impregnation of the vitriolic acid; in others of the carbonic; and in others the taste is aluminous or ferruginous: while others again are perfectly insipid.

It is common for the country people to place their culinary utensils over the hot fountains, or upon some of the steaming crevices, and thus they save the expence of fuel in preparing their victuals. Experience has even taught the cattle to approach this place, and clear themselves of vermin, by standing on the hillocks amid the sulphureous steam.

Near to the hot springs, skirting a hill of pumice stone, runs a small stream of cold water, into which several cold springs that rise on the hill immediately empty themselves; in this short course they deposit some a pale yellow ochry sediment, and others a high coloured one. Their taste is sharp and acescent, and their smell ferruginous. The pungency in some is excessively penetrating. In a glass the water sparkles like champaigne.

To the westward, at the distance of a quarter of a mile, is also a variety of hot mineral springs, not quite so large as those already mentioned, where huts have been erected with

bathing places, for the resort of persons to use the waters. About a mile further up the valley, in the same direction, are others also of the same nature.

The ground and the plants in the vicinity of these springs are covered with a yellow crust. Still farther westward, nearly a mile, runs a river, called *Ribeira Sanguinolenta*, or *Bloody River*, from its deep red colour. On the banks of this river rise a few cold mineral springs, of a strong ferruginous acescent taste and smell, which deposit a whitish ochry sediment. Beyond a range of mountains, and nearly a mile southward, on the borders of a lake, are a number of other hot springs; here the same difference and variety is observable, as among those already described; several of them boil violently, with a noise not unlike the humming of bees, and they throw up a thick glutinous blue clay, which is ejected to a considerable distance, with bubbles and vapor. On the surface of many there swims an oily bituminous scum. Here also, in the vicinity of the other fountains, there is a variety of beautiful crystals and thick encrustations of alum and sulphur.

Among the hot springs situated here, is one that merits particular attention; it is in the form of a basin or pool, 12 feet broad and

twice as long, and boils with great force and much noise. Close adjoining to this hot pool rise several cold springs, from a bed of pumice: these, though completely cold, are in the same state of ebullition as the hot fountains. They have a very sharp acescent taste and smell, and are also highly impregnated with the aerial acid. Besides what I have mentioned, there is also a variety of mineral springs in different parts of this island.

I have to regret that I was here only a few days, and that I was not furnished with a proper apparatus for making that satisfactory analysis, which it was much my wish to have made, and which never can be properly performed except upon the spot. The extreme volatility of many of the component parts, and the almost instantaneous change in many of the appearances, must render every examination and process, entered upon at a distance, fallacious and inconclusive. However what few experiments it was in my power to make, will serve to shew the principles predominant in the composition of the different waters.

The numbers refer to those inscribed on stones lately erected near the different fountains.

I. COLD.

II. MODERATE.

III. BOILING.

IV. STEAMING.

I. COLD.

a Carbonic Acid.

b Carbonat of Iron.

c Sulphurated Hydrogen Gas.

II. MODERATE.

a Carbonic Acid.

b Carbonat of Iron.

c Carbonat of Iron and Aluni.

d With Sulphur of Iron and *a* Sulphurated Hydrogen Gas.

Alum.

e Sulphurated Hydrogen Gas.

III. BOILING.

a Sulphurated Hydrogen Gas.

b Do. with Alum.

c Do. with Vitriol.

d Do. with Argil.

e Do. with Alum.

f Carbonic Acid.

IV. STEAMING.

b Do. with Argil.

c Do. with Alum.

EXPERIMENT I.

No. 1. Two cold springs. One transparent, having a penetrating acescent taste, and a strong ferruginous smell; deposits an ochry sediment. It is turned purple by tincture of galls; gives a muddy precipitate with lime water; sparkles when shaken, and becomes perfectly insipid.

EXPERIMENT II.

The other spring deposits a bluish sediment. In taste it possesses an acescent pungency, which on agitation dissipates to insipidity. The tincture of galls does not produce in it any sensible alteration; lime water produces a muddy precipitate.

EXPERIMENT III.

No. 2. A hot spring. The water here boils, and emits a strongly penetrating sulphureous and ferruginous smell. With tincture of galls it becomes black; with lime water it gives a cloudy precipitate which falls to the bottom; and with a small portion of infusion of rhadish it gives a bright red colour.

EXPERIMENT IV.

No. 4. Another boiling hot spring. The water here deposits a blue sediment. Its taste is slightly pungent and austere; it becomes muddy with lime water, and effervesces with nitrous acid.

EXPERIMENT V.

A cold spring. The water here deposits an ochry sediment, has an acescent ferruginous

taste and smell; is changed to a dark colour by infusion of galls, and to a sensible red by infusion of horse rhadish.

EXPERIMENT VI.

No. 16. A hot boiling spring. It deposits a blue sediment, emits a strong smell of rotten eggs. In taste is sharply acescent; but becomes insipid on agitation, and precipitates with lime water.

EXPERIMENT VII.

No. 20. A spring of moderate heat. This spring deposits an ochry sediment. Its sharp austere taste becomes dissipated on agitation; it forms a cloudy precipitate with lime water, and gives a dark purple with tincture of galls.

EXPERIMENT VIII.

No. 13. A steaming hot spring, of a milky appearance, and bordered with encrustations of a dark red and green colour. This spring deposits a white clayey sediment; emits a violent steam. In taste is sharp and austere, with a strong hepatic flavour. With infusion it assumes a light red colour.

EXPERIMENT IX.

No. 30. A cold spring, which deposits an ochry sediment, and possesses a taste and smell strongly ferruginous, accompanied with a pungent acescency. On agitation it emits bubbles, sparkles, and becomes insipid. It precipitates with lime water, and is changed to red by infusion of radish, and to purple by infusion of galls.

EXPERIMENT X.

No. 31. A cold spring, depositing a sandy sediment. In taste it is slightly acescent. It sparkles on agitation, and becomes insipid; it precipitates with lime water, and becomes red with infusion of radish.

Notwithstanding the waters have been for so many years resorted to by the inhabitants, for the cure of every species of disease, as well as for pleasure and amusement, yet the only accommodation for bathing are a few thatched huts. In these, wooden reservoirs are sunk, two or three

feet deep in the ground: they are filled by a wooden spout, and emptied through a plug-hole in the bottom. The warmth is tempered at the option of the bather, by the admission of water from the cold mineral stream. As all ranks of persons indulge in a very liberal use of these baths, and many even soak themselves in them several times a day, we might be led to conclude, *a priori*, that such frequent use of warm or tepid water, must produce relaxation. This however is not the case; on the contrary, they act as a stimulant to the whole system, exhilarating the spirits, and exciting the appetite. When the waters, and particularly those of the cold springs, are drunk, they prove both laxative and diuretic, and also promote the excretion by the surface. As the inhabitants are totally ignorant of the virtues of the cold springs, and also of the use of the vapor bath, I had an opportunity of making them acquainted with the properties of the former, and likewise of demonstrating the active power of the latter, in several cases.

CASES.

A young man, aged twenty, had been attacked with a violent rheumatism, which

brought on a contraction of the joints in his lower extremities, particularly in the flexors of his knees. This contraction was so great, as to bring his leg nearly in contact with his thigh, and his knees were actually touching each other; nor could he separate them more than a couple of inches, and that only at particular times. In this unhappy situation he had been confined to his bed for nearly five years. On applying to me, I directed him to use the vapor bath: a chair was made for the purpose; it was so constructed as to include the whole body, leaving the head free at the top, where there was an aperture, which could at pleasure be opened or closed, for the purpose of regulating the heat. This chair was placed upon the ground, whence the sulphureous exhalation issued. He remained in it seven minutes the first time, and was thrown by it into a profuse perspiration. On using it a second and third time he experienced sensible relief; he could sit out of bed, stretch his leg to an obtuse angle with the thigh, separate his knees, and even walk on crutches. He continued the use of the bath for three weeks, at the end of which time his family concerns called him home; but he went away much recovered, and was convinced of the very great efficacy of the vapor.

A person who was affected with a hemiplegia of the right side, and had lost the use of his arm, had recourse to the vapour bath. It soon enabled him to lift his hand to his head, and afforded him much relief in other respects.

Besides these instances which fell immediately within my own knowledge, I have been informed of several other well authenticated cases, which demonstrate the great efficacy of these waters, not only in rheumatic complaints, but also in the most inveterate cases of scrofula and other disorders.

A few years ago, a Portuguese gentleman, aged about fifty, from the island, C— C— a man of family, and well known to many British residents in that island, was affected with a variety of scrofulous ulcers, in different parts of his body, particularly about his neck and breast. The attention and skill of the most eminent of the faculty had been long exerted in his case in vain. The disease not only resisted, but seemed irritated by the use of medicines. He at last took the resolution of coming to St. Michael. Here he used the warm bath, in which he also washed his sores, while at the same time he drank the water. By this course, in a few months, he was perfectly recovered, and returned to Madeira, to the great surprize

of his friends, in perfect health, and without any other remains of his former complaint, than the large cicatrices of his ulcers, then completely healed.

A young gentleman of family, also from Madeira, whose name I do not mention from motives of delicacy, laboured under an inveterate cutaneous affection of the head, with running sores in several parts of the body, particularly about the back. He was, by bathing in the waters, and also using them internally, completely cured in a few weeks.

An elderly priest, of a rather full corpulent habit, had been affected with the gout in his lower extremities. He was advised to use the warm bath a few years ago. His complaint was in consequence removed, nor has it since returned.

Upon the whole I think, there is much reason to believe, that these waters, both internally and externally applied, may be found very efficacious in a variety of diseases. The vapour bath seems to be more powerful, and in general much preferable to the hot water bath. The volatile parts are more disengaged, subtle and active, when in the form of vapor, than when combined with and entangled in the water; the degree of heat is also more easily regulated in the vapour, than in the hot bath.

The cold springs contain a powerful chalybeate, with all the virtues the carbonic acid is possessed of, and when drunk, cannot fail to prove useful tonics in cases of debility. I consider the morning as the most proper time, both for bathing in these waters, and using them internally. In the latter case they ought to be drunk immediately at the source, before the virtues have evaporated. The dose at first may be about half a pint, which may be repeated in the evening, and afterwards gradually increased.

FINIS.

2

OBSERVATIONS,
&c.
ON THE
EPIDEMIC DISEASE,
WHICH LATELY PREVAILED
AT GIBRALTAR:
INTENDED TO ILLUSTRATE THE NATURE
OF
CONTAGIOUS FEVERS IN GENERAL.

BY
SEGUIN HENRY JACKSON, M.D.

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON ;
CONSULTING-PHYSICIAN TO
THE WESTMINSTER GENERAL DISPENSARY ;
AND PHYSICIAN TO THE INFIRMARY OF SAINT GEORGE,
HANOVER SQUARE.

“ Solus veritatis Amor, et communis utilitatis Studium, ad has partes
suscipiendas impulerunt. Quid quantumque hoc Meum sit, prudentis,
ac boni Viri Judicium esto; Mihi satis superque erit, illud, et publicæ
utilitati, et præsertim ANGLORUM CIVIUM incolumitati, consecrasse.”

BAGLIVI. Praef. Prax. MED.

London:

Printed for J. MURRAY, Fleet Street; and J. CALLOW, Crown
Court, Princes Street.

1806.

TO
HIS ROYAL HIGHNESS
THE
PRINCE OF WALES.

SIR,

THE importance of the subject, which the following pages are intended to elucidate, and the interest your ROYAL HIGHNESS has uniformly taken in whatever can benefit mankind, have induced me to solicit, that your ROYAL HIGHNESS would graciously accept them.

The opinions which your ROYAL HIGHNESS has in consequence permitted me to lay before you, I trust will not be found wholly undeserving of notice. They are the result of much reflection, and of many years experience. I submit them to the inspection of your ROYAL

DEDICATION.

HIGHNESS, and of the public, with diffidence; but at the same time with a full persuasion, that they are warranted by facts.

That your ROYAL HIGHNESS may long live to enjoy the loyalty and affection of a free and happy Country, is the earnest wish of,

SIR,

Your ROYAL HIGHNESS's

Most grateful,

And

Most dutiful Servant,

SEGUIN HENRY JACKSON.

Hanover Street, Hanover Square,

June 1st, 1806.

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* * * *

Since the printing the Preface was completed, the Author has been informed, that the Practitioner alluded to at the conclusion of it, has dropped his intentions of publishing on the subject. He learns, also, that that respectable Gentleman was the leading Physician at the Garrison, when the Epidemic Disease broke out, and not sent thither, as the Author supposed, when he forwarded the Preface to the Printer.

THE PREFACE.

THE universally known danger, and even acknowledged fatality, of the malignant epidemic fevers of tropical climates, must stamp some degree of importance on the most humble attempt to elucidate the hidden nature of such dreadful maladies. To this general purpose the author's mind has been devoted in the prosecution of his endeavours, to investigate the particular and specific nature of the late Gibraltar pestilence, by discovering, if possible, the immediate cause of its mortal tendency. In prosecuting these his views, he has met with nothing to shake his hopes of throwing some new light on this hitherto dreadful scourge on the inhabitants of the tropical climates. He flatters himself, that they will in a great measure tend to the security, as well as ease of mind and happiness, of mankind in general.

When we consider the late mortality at Gibraltar, as arising from a disorder of a relative character to those endemic and epidemic fevers, which have been ordinarily denominated the plague, the yellow fever, and the highly malignant typhus, the treatment of the subject must interest all those, who are destined to visit the countries, where such periodical complaints almost annually occur, and also all those inhabitants of the

world, who have a commercial intercourse with such pestilential situations. Writers, both ancient and modern, (for such calamities have been recorded for several thousand years) acknowledge, "that the nature of the plague is as little known, as that of some other diseases." It would be very lamentable information to mankind, if other diseases were as little understood as the plague. But I may aver, that we are far more advanced in the general pathological science of medicine, when it is compared to what has been hitherto discovered of either the plague, the yellow fever, or all those generally called malignant and pestilential fevers of a similar description.

The BOARD OF HEALTH of this country, consisting of several most respectable members of society, and of the Royal College of Physicians, in their outline of a plan under the sanction of the HONORABLE PRIVY COUNCIL, to prevent the spreading of the plague, or other contagious diseases attended with great mortality, in case such should pass the barrier of quarantine, and actually appear among us, have denominated the late febrile disease at Gibraltar, a *pestilential distemper*, and have contrasted its defined character, as received from thence, with that of the plague. See the First Report 30th April, 1805.

Pestilential distempers, ordinarily understood as such, or in other words contagious fevers, have been considered either as the plague, the yellow fever, and the bilious remittent fever, of tropical climates; or the typhus, and putrid fever, of our own country; terms of distinction applied to perhaps different degrees of virulence only of the same general disease. They have all hitherto been considered as febrile disorders of the high

typhoid malignant character, and of the most pestilential, or pestiferous, tendency. A doubt of the true nature of the typhus fever of this country, long entertained by the author, had for some time led him to reflect much on the general pathology of fever, while treating complaints of that character: and the late remarkable events at Gibraltar determined him to hazard his opinions on the subject before the public; having suspected the mortality at that place to have arisen from a PYREXIAL EPIDEMY, and not from a truly contagious malignant typhoid disease, as a genuine idiopathic fever. He thinks it can be, by a fair deduction from facts, proved to have been more a local inflammatory affection, and also, properly speaking, not of contagious, but atmospheric, origin.

In the minds of many learned and long experienced practitioners, the opinion respecting the existence of high contagion seems to be losing ground, and will, the author flatters himself, be in due time wholly laid at rest, which must afford considerable comfort and felicitation to ALL, but in a more especial manner to the commercial parts of the world. A great step towards a more minute and steady inquiry into the truth of this part of the subject must be gained, from the new sentiments entertained on it by Dr. RUSH of Philadelphia; and in order to extend as much as possible the publicity of this Professor's new way of thinking, the author begs leave in this place to inform his reader, that the Editors of the Medical and Physical Journal of London have, in their number for March last, namely the 85th, been addressed by Mr. L. J. JARDINE, of Liverpool, in the following pointed manner, as

regarding Dr. RUSH's recantation of his old doctrine of febrile contagion.

"My friend Dr. RUSH, of Philadelphia," says the correspondent, "has in his new edition of his Medical Inquiries and Observations, retracted his former opinion respecting the contagious nature of the yellow fever, and being desirous of making this recantation as public as possible, he has requested me to obtain the insertion of the following extract from his (Dr. RUSH's) preface, in one of the periodical works of this country. If you will have the goodness to give it a place in your valuable Journal, my friend's object will be fully accomplished."

Liverpool, February 10, 1806.

The extract is as follows. "In the fourth volume the reader will find a retraction of the author's (Dr. RUSH's) former opinion of the yellow fever spreading by contagion. He begs forgiveness of the friends of science and humanity, if the publication of that opinion has had any influence in increasing the misery and mortality attendant upon that disease. Indeed such is the pain he feels, in recollecting that he ever entertained or propagated it, that it will long, and perhaps always, deprive him of the pleasure he might otherwise have derived from a review of his attempts to fulfill the public duties of his profession." *Preface to his Medical Inquiries.*

Nothing could be more honourable than this conduct of Dr. RUSH, who proves himself, by the preceding recantation, to have ever been the true friend and physician to society.

The author flatters himself, that the particular opinion he at present ventures to throw out for the consideration of the profession and the public, will prove a fresh ground of support to the doctrine of NON-CONTAGION, and amply justify the learned Professor, in having retracted from his former opinion.

The author suspects much, that during the period of a raging pestilence, or even a sickly season in a tropical climate, disorders of a febrile character, though arising from excess of fatigue, bad provisions, or any other occasional cause, have too frequently been considered as partaking of the truly epidemic nature. Doubts may sometimes be just, even on other grounds. ASSALINI, a late writer on the plague of Egypt, speaks of a few deaths happening from a suspicious disease, which excited alarm, and which, without having recourse to contagion, were, in his opinion, occasioned by the evaporation of stagnant waters, rendered noxious by the putrefaction of aquatic plants, and of unusual quantities of fish. In this opinion he accords with the present sentiments of Dr. RUSH. But I shall find occasion to speak more at large of ASSALINI's experience and observations, during his residence with the French army in Egypt and Syria, in a future part of my undertaking.

It is a secondary object of the present publication, but one of no trifling consideration, to find a path leading to a better understanding, as well as a more successful treatment, of the TYPHUS, or *typhoid fevers*, of our own country. It has become in a manner so much the fashion to admit this GENUS

of fever to be so general, that the one in direct opposition of character to it, namely the SYNOCHA or *inflammatory fever*, is now rarely acknowledged to be met with in practice. And because fevers in general in this country are not characterized so strongly with the full or high typhoid symptoms, as they have ordinarily been remarked to be in tropical climates, nosologists have admitted, and practitioners have countenanced, the idea, or existence, of a mixed fever, which has been denominated the SYNOCHUS. This is properly the true low nervous fever, which the author is disposed to consider as being most frequently a symptomatic, not a true idiopathic, fever. He will attempt to elucidate this particular sentiment in a subsequent part of his undertaking, in the hope of hastening in future the cure of that particular description of disease, which has been so denominated, and as such treated, and which has so often proved fatal even beyond twenty-one days, notwithstanding the most regular, and scientific, principles of practice. This is also that particular kind of fever, which being treated as of an idiopathic character, has so often been discovered after death to have been dependent on some local inflammation, or visceral affection, which had not been early enough suspected, or properly understood, during the life of the patient. This becomes a most important subject of inquiry.

The author has adopted the plan of publishing his intended illustration of the Gibraltar fever, and of epidemic fevers in general, IN PARTS, from the following considerations. I. It will give him the opportunity of sooner making known the particular opinion he entertains, as the FIRST PART will discover

the main object of his future reflections, and the purport of the parts, which are to follow. II. It will, he hopes, by thus early throwing himself upon the candour and judgment of professional men, obtain for him the sentiments of others, towards the future prosecution of his undertaking, as he proceeds with it, and which, whether favourable or not, he may embody with the succeeding parts of the publication, as they should happen to approximate to the nature of his own plan. He has already perfected the plan according to his own way of judging of the subject, and has arranged the facts in evidence of his opinion. They will be selected from both medical and chirurgical practice, as connected with various sensorial affections. The several succeeding parts are also nearly ready for the press. The whole will form an aggregate of observations, communications, commentaries, and conjectures, interspersed with practical remarks, so as in the end to establish a new pathology of the ordinarily admitted contagious and epidemic fevers of every clime.

The first part will embrace general observations on the science of medicine, and on the present opinions of febrile and sensorial pathology. The second part will comprise such communications, with occasional remarks, as have already been received on the particular subject of the late Gibraltar fever. The third part will consist of commentaries on those communications, and on the treatment of the said disorder, in the light both of an ordinary pestilential distemper, and in the way the author has conceived of it, namely, as an epidemic phrenitis, or brain fever. The fourth part will particularly

have in view practical observations on the whole; with indications appropriate to the future prevention and cure of such a truly local, or phlegmasial, disease. Of this plan the profession and the public are to be the judges. To their adjudication it is most humbly submitted; and if by the practiee and reflections of others hereafter, the opinions now thrown out should be established, by future trials and experience, the author will feel much satisfaction at having ventured to submit them to the gradual consideration of posterity.

The lapse of time, since the author first intimated to the public his being engaged in an enquiry into the nature of the late Gibraltar pestilence, requires some apology. He wishes it therefore in excuse to be understood, that the delay has partly arisen, from his not having received some communications, with which he had indulged the hope of being favoured: (this may hereafter be more particularly explained:) and partly, from not having so much hastened the printing of the FIRST PART, owing to the constant expectation, and rumour, of an intended publication on the subject, from the pen of an able and intelligent medical practitioner, who had been sent to the garrison to assist at, as well as investigate, the fatal scene.



The reader is requested to observe, that the references by numbers, in the progress of the work, relate to the paragraphs, and not to the pages.

INTRODUCTION.

Preliminary Observations.

1. THE hazard in submitting to the consideration of the learned and long experienced new praetical observations on a particular disease, is fully felt on the present oceasion. I acknowledge my doubts and the diffieulty of conducting the present undertaking with full satisfaction to my readers, from not having had a personal opportunity of judging of the Gibraltar malady, by a close eomparison of its rise, progress, and termination, with the history of those affections, to whieh it has been supposed allied. My only apology, therefore, to the publie and the profession, for such an intrusion, must be on the ground of ealm reflection, and general experience for a long series of years; having very early in life indulged a desire of investigating some of the *arcana* of fevers. Very soon after my first being in practiee at the Westminster General Dispensary, namely, in the year 1780, I entertained an opinion, from particularly attending to the phænomena of pyrexial diseases

in this country, that the real nature of the epidemic and endemic disorders of the Continent had never been fully understood, at least, had not been so fully investigated by the ablest practitioners of the tropical climates, as their specific character and fatal tendency seemed to demand. All my readings on the subject of local fevers in this or that particular quarter of the world, with all deference to my professional brethren, had then been and still remain so unsatisfactory to my mind, as to fall short of explaining to it all the phænomena which have attended them: on the contrary, they have ever impressed it with a feeling of conviction, that the ordinary want of success in the medical treatment of contagious fever, commonly so called, even in this country as well as abroad, arose from its not according with the true nature of the spreading malignant disorder, either with regard to the predisposing, occasional, or proximate causes.

2. I was next led to pay more particular attention to the subject by forming, as I went on, some criticisms on my own practice, for which my attendance at two public institutions, for the last twenty-one years, afforded me the best opportunities, and even had been of no small extent at one of them, for several years before. About a year and a half ago, when my mind became most decidedly bent upon attempting an investigation of fevers on the Continent, from which I had only been so long deterred by the known difficulty of the subject, an event took place in my own practice, (and which will hereafter be mentioned) that so confirmed me in the opinion I had for some time entertained of former epidemics, as to be felt by me, as nearly removing that cloud from before my eyes,

which must have often stood in the way of my own success in practice, as well as it may have been an obstacle to that of others. With the increasing force of these sentiments, my intentions acquired new zeal at the time the nation became so alarmed by the apprehension of the approach of an epidemic or contagious fever from the shores of Andalusia, lately so destructive to the inhabitants of our valuable fortress of Gibraltar. This painful event has naturally served to lead me to a still closer inquiry into the subject, rouzed by a fatality to my countrymen which has been unexampled; and which to my reasonings on the melancholy occasion is a proof, that the true nature of the recent disorder at Gibraltar had not been at the time suspected by the most experienced practitioners on the spot, which I think can only be attributed to the prevalence of *one opinion*, and the force of example on all such occasions, in the treatment of almost all epidemic and endemic fevers. This *particular opinion* will be more pointedly noticed hereafter.

3. In order to qualify my mind for full reflection on the subject, and to balance the want of direct personal experience, I have of late read at my spare hours from professional and domestic avocations, such recent observations on that febrile disease called by some the plague; by others, the yellow fever; by some again, the bilious remittent fever; and by many, a pestilential typhus; as would furnish me with a selection of well-grounded facts relative to those tropical disorders: presuming that whatever advantages might have arisen from consulting ancient publications on the subject, must have already been experienced by the later writers, when they had referred

to those authors. But *all* the practitioners of the present day seem to have agreed in one opinion; namely, that the disease, the subject of my particular enquiry, was either a typhus, or a plague, or a yellow fever, or some such disorder, and generally considercd of the most malignant kind, as well as of an epidemic and dangerous character: though it does appear, from the observations and hints of many professional and learned men, that the contagious nature of the disease is of late much called in question. It affords me therefore much satisfaction to observe, by the writings of literary practitioners of the present century, that the mind of the medical philosopher has at length become bent upon determining, whether or not contagion is the source of the spreading febrile evil, during a pestilential season any where, as well as in tropical climates.

4. As a proof of the ambiguity attendant on the subject, the learned and experienced Dr. RUSH of Philadelphia, has wholly changed his opinion, since the ravages of the yellow fever in the years 1793, 1794, and 1797, of which he then had such experience, and such opportunities for judging of its rise and progress. He has of late become a strong advocate for the non-contagiousness of the disorder. The Doctor however has not succeeded in bringing over, to his new way of reasoning on this subject, the Editors of the New Edinburgh Medical and Surgical Journal. They are disposed to give more weight to the arguments he formerly made use of to support the doctrine of contagion, and have even defended his former sentiments by some evidence and reasoning of their own. These gentlemen are even afraid of a nations being put off its guard, by giving in to the recent opinions of Dr. RUSH, which are so

well calculated, if hereafter proven to be just, for future benefit to society, not only to families and to whole cities, but even to kingdoms and empires. Consistent therefore with their way of thinking, the Editors have concluded their criticisms on the learned writer's defence of non-contagion, with the following sentence :—“ Could any degree of freedom in commercial intercourse compensate for the valuable lives which were lately lost at Gibraltar, in consequence of the doubt or disbelief first entertained of the contagious nature of the disease, which almost depopulated that important fortress ! ” This I trust, and think, was not the true cause of the subsequent mortality ; and as some consolation to those affected by the above opinion, I shall venture to hope, that it arose solely from the *hidden* nature of the disease, whether contagious or not. Such however is the present divided state of opinion on this important subject. But the controversy must in the end lead to the good of the people ; and I trust that the question giving rise to it will not be lost sight of, until it is fairly and satisfactorily determined on, one way or the other. The investigation is arduous, and will necessarily be liable to diversity of sentiment, from local and provincial causes.

5. I profess not to have read much, not at least the voluminous writers on the subject ; probably not enough therefore in the opinion of some : but I contented myself with repeatedly reading and reflecting on the same page, when I was pleased with the author, and thought his relation of facts and remarks interestingly connected with my enquiry : I then indulged in commenting on them, consistent with the general laws of the animal economy, and the best doctrines relating to general

pathology, and the immediate connection of the sensorium and nervous power with the vital and animal functions of the human frame. In this research I found none more consistent, none so extensive or better adapted to the experience I have had, and to the observations I have made, than those I heard, and imbibed in my early days, under the intuitive mind of a CULLEN; and I must add, that whatever new practical ideas I may have since acquired from a large and regular experience, I feel disposed to attribute their birth to the rational and fundamental principles of medicine, which that great professor so well laboured to establish, though he did not succeed in obtaining a general admission of them. I can only attribute this reserve in the minds of some to those difficulties, which stand in the way of adapting any one system to the variable opinions of mankind; and to the rage and amusing love of controversy. I should not have presumed to have said so much of my own opportunities, but with the wish and view of meriting more the attention of my reader.

6. I cannot in this place pass over in silence the memory and labours of a man, who was cotemporary with CULLEN, and who had so ingeniously employed his mind to investigate and improve the deep and dark science of medicine; whose opinions, though peculiar and very limited, have obtained much credit, and many converts and admirers, particularly on the Continent. I fear there has been too much eccentricity and narrowness in them, to lead to the desired end; namely, a more successful practice. On a simple view of them, danger to the sick even stared the well informed practitioner in the face; for his genius had led him to generalize too much the

laws, and actions, or powers, of the animal economy; and he must thereby have tempted the young practical adventurer, to combat with disease, before he could possibly have laid up a sufficient store of medical and philosophical science, to guide him through the labyrinths and difficulties of the art. I speak of the late Dr. JOHN BROWN of Edinburgh, (with whom I was there personally acquainted) a man, whose efforts in the cause of physiology and pathology can never be forgotten. The Editors of the before-mentioned Journal have with great propriety observed that “to the generalization above alluded to, he had sacrificed the experience of ages for the hypothetical dogmas of his own new practice.” I nevertheless think his new ideas on the subject, and simple arrangement of diseases into the sthenic and asthenic, have served one good purpose; namely, have disposed the minds of medical students and practitioners to seek a closer investigation and knowledge of the Cullenian system and practice of physic, and have tended no doubt to heighten in their opinions the value of both; for they both preserve their respectability and importance, and continue at this time to be taught in all our medical schools. I shall therefore find but little occasion to notice at present the Brunonian doctrine.

7. It may however be remarked, that all the observations and experiments hitherto promulgated, though many are rational, and may ultimately serve to elucidate my reasoning on the subject, will not yet tend, I fear, to any greater advantage in future to the human race, when exposed to epidemic diseases of the most malignant and rapidly fatal character, unless some certain change of practice, as well as opinion, can be establish-

ed from them, for the future conduct of the practitioner on such trying occasions; so as to do away altogether both the idea of a specific fever, as well as of contagion connected with it. The *desideratum* wanting is a clear and perfect knowledge of the affection, which I have reason to believe is not only wholly unknown, but that it is local, or topical; that the whole of the symptoms, as well as the fever, are symptomatic of a certain local affection; and that until it is considered and treated as such, it will continue to be still as fatal as it has hitherto been, whenever it should in like manner again occur. What that local or topical affection may or can be; how occasioned; and how it is to be prevented and cured, will become the main object of this undertaking to elucidate; and which I shall attempt in part to do by analogy with other known disorders, to which I think the late Gibraltar malady was, as well as the commonly called Yellow Fever of the West Indies has always been, more or less allied.

8. The recent opinions and experiments already published, and to be hereafter noticed, respecting the non-contagiousness of the disorder, will strengthen the investigation I am about to attempt; and I shall, on the other hand venture to foretell, that *these very opinions*, as at present entertained by Dr. RUSH and many others, and by some very rationally supported, though not yet satisfactorily proved by any, will, I flatter myself, receive additional weight from *the particular sentiments I have adopted*, respecting the specific nature and true cause of the late pestilential disorder at Gibraltar. I may therefore, in the progress of my undertaking, have occasion to notice the said opinions more particularly: Both together may, I trust, ren-

der all future provision against receiving infection, such as lazarettos and quarantine, evidently nugatory and unnecessary. Still there is that wanting to my present purpose, which has never been sufficiently sought after, or carried to its full and proper extent, from the so very strong and general opinion entertained of the disorder being of a truly idiopathic febrile character, and that too of the most contagious and malignant nature :—I mean the strict attentive examination of *the body* after death, so as to have led practitioners to a complete discovery of that local morbid affection, to the existence of which I am disposed to attribute, according to its degree and extent, all the symptoms, as well as the particular fatality of such febrile epidemic complaints.

9. In the progressive treatment of this very extensive and important subject, I shall be gradually and insensibly led to those essential points, or *data*, which will then appear to have justified my present manner of introducing the particular object I have had in view by this publication. I especially beg leave to address it to the serious consideration of teachers of medicine, and all the intelligent members of the medical community, who cannot, on the principles I proceed, be led astray in a concern of this momentous nature; and who, I am sure, will with candour attend to its defects, as well as to its difficulties and importance; and when in their power further elucidate the subject for the benefit of the world. I most earnestly call upon the attention, assistance, and indulgence of those, who have already been, and of those who in future may be, engaged in continental and West Insular

practice, firmly hoping, that through the blessing of Providence, this happy country will never be afflicted with the like disorder. If the subject should prove worthy the notice of such, I trust we shall never hear again of such a mortality of the human race in this or any other part of the world, as was so recently experienced at Gibraltar, under the most trying circumstances to the country.

On the best Mode of studying Medicine.

10. The great difficulty in the practice of medicine is not only the just discrimination of diseases from one another, as to their affecting the same or different organs, but when their effects are general and when topical: for often we are equally embarrassed to decide when they are universal or general, and when local or topical. Generally speaking, universal disease affects the whole system; local disease only particular parts of it. I question however the propriety of the opinion, that apoplexy and inflammation are of the first kind; for it most frequently happens, that the system becomes universally diseased, in nervous and inflammatory affections, from local causes injuring, or disturbing, the functions of the brain and the circulation. I feel disposed to go still further, and do conceive, that a febrile state of the system, whether of the synocha, typhus, or synochus character, almost always depends upon some local affection. Therefore every febrile state of the system may lead to danger; and therefore what a modern reporter of respectability has advanced, "that no person *ought* to die of fever" (Medical and Physical Journal)

may be just, if we always could, and did, discover the local cause supporting the febrile action of the system.

11. But we live at an æra so strange and unpromising, and still so far removed from a perfect knowledge of our profession, if we are to give credit to all we read, that even the *physis pulmonalis*, which I may with propriety call the *endemic* or indigenous disease of our own country, is thought to be a complaint at this day so little understood, and for which other pulmonary affections are *even now* mistaken, after all that has been written on that subject, that it has been advanced in a late number of the Medical and Physical Journal, “that the patient more frequently dies from a consumption of medicine, than from a consumption of the lungs.” This is an *opprobrium medicorum*, a declared *error judicii*, without mercy. I may however add, so unenviable is a professional man’s life, that it would be happy for all, if there were no more *errors* of this kind in the general practice of fevers, than there are in the treatment in general of pulmonary disorders. I believe the latter, notwithstanding the above declaration, are better understood than the former.

12. Teachers of medicine have naturally started the question “on what plan would the study of physic be most advantageously established? Should it be on an empirical or a dogmatical plan?” If we adopt the empirical plan of practice, it is incumbent on us not only to know of many remedies applicable to the cure of particular diseases; but we ought also, and in fact we do, know, that many diseases so resemble

each other, that without the aid of theory and science to guide us, we should with difficulty distinguish them; and should not even acquire such necessary knowledge, without having waded through a great deal of bad practice to acquire it; and even after all should have it imperfectly. It is therefore important that we should, early in life, learn to discriminate well by science and application, because diseases severally require different and perhaps specific medicines to remove them. Therefore, if certain remedies are best adapted to particular diseases, we ought most studiously to acquire that knowledge, by which we have the best rules to distinguish them, that we may not unnecessarily clog the practice, and prolong the cure, (if we have the good fortune in the mean time not to do harm by the defects in our knowledge) by administering remedy after remedy in the same disease, before we hit upon those best adapted to its removal. The practice however being certainly both conjectural as well as experimental, we should be the more cautious how we refer only to our dogmatical, or confide in our empirical, mode of treatment.

13. The great professor, CULLEN, strongly inculcated a watchful attention on this head; and steadily advised his hearers not to practice medicine with a superficial and indistinct knowledge of the science; and in order to discourage the practice on an empirical system only, observed, "that reasoning and experience in medicine are truly inseparable." "That a just knowledge of morbid bodies depends upon our correct knowledge of them in a healthful state;" and for that knowledge strongly "pointed out the necessity of having recourse to anatomy, physiology, and pathology," as the best

ground for establishing a successful method of cure. I therefore think with CULLEN, "that theory and experiment should be connected, in order to place the practice of physic on a firm foundation."

14. Of all the modes of education on a dogmatic plan, which have been recommended by different teachers, I most approved of CULLEN's, as I thought I saw it built upon a better selection of facts and observations, derived from anatomy and practice, than any other: and though I long ago differed from him, particularly in his supposed sympathy between the muscular fibres of the stomach, and the extreme vessels on the surface of the body, in his explanation of febrile phænomena, that is, differed with him not in the principle, but in the application of it anatomically and physiologically considered, (See my Treatise on Sympathy, p. 120 et seq.) I still found his theories in general so well supported by facts, and grounded in correct anatomy, at the same time as much simplified as the subject would admit, that I feel I have reason to attribute what I now better know of my profession practically, to the soundness of his doctrines, and to the near approach to perfection in his system of medicine, the fruits of a long life of research and study, and of a laborious application of them to observation and experience.

15. Of opinions in medicine, founded on the minutiae of anatomy, I presume I could tolerably well judge in the earliest period of my professional career, from having attended six courses of the late celebrated W. HUNTER before I went to Edinburgh; which made me feel very forcibly the observation thrown

out by Dr. CULLEN, on the use of anatomy. "Anatomy," said he, "in its importance to the practice of medicine, may be compared to the organization of a watch, or any very complicated machine. We ought to view it in forming our judgment of diseases, as to the body's component parts, as the mechanic refers to the perfect construction of his work, when he views it for the purpose of repair." The leading step, therefore, to early success in the practice of medicine, is a just and proper distinction of diseases from one another. But the perfection of this knowledge can only be founded in anatomy, and gradually acquired by an attentive observation, and long practical experience; and such a co-operation must add great weight to the instructive powers of every teacher, as it, no doubt, had done to those of Dr. CULLEN.

16. I shall conclude these important observations by mentioning, as a necessary axiom in education, that minuteness in teaching must not be complained of. It is of the first consequence, in order that the young practitioner may afterwards the more readily establish for himself a just diagnosis of diseases, and a clear discrimination between universal and topical affections, as to their extent, and degree: and thereby the sooner form for himself, by his own experience, as ready and perfect a system of practice, as the difficulties of the science will permit. Let him well remember, that the symptoms of diseases are no more than so many instances of the *functiones lœsœ.*

17. These most important consequences are not only annexed to the discriminating between universal and local diseases, but

also between idiopathic and symptomatic fevers. True idiopathic fever seems to me more strongly marked, or even characterized, by a greater disturbance, or increased action of the heart and circulating system, than when a febrile condition only attends symptomatically any local inflammatory affection of a vital or animal organ, or of any external part of the human frame. This will be, in due place, more distinctly pointed out: but as connected with the preceding sentiments, it has demanded this allusion at present.

18. I must in this place frankly own, that after twenty-seven years of constant experience, (2) I am more sensible *now* of the difficulties of the science, than I was when a young man; and this must apologize for my having hereafter so largely entered upon the general doctrine of febrile affections, as connected with my proposed enquiry: thinking such *data* will, as the preparatory ground, the more readily assist *some* of my readers in comprehending my views, and in the hope of rendering *them* familiar with pyrexial disorders, as I may have become myself, from an experience, I may say, of nearly thirty years.

On Life, Health, Disease, and Death.

19. Some general observations on the science of medicine, and the laws of animal life, as connected with the various deviations from a perfect state of health, may here be properly introduced, as pertaining to the object of this work. Infancy, youth, manhood, and old age, have all an instinctive interest in the progressive stages, and situations of human life, as referable to the ensuing remarks, in as far as each, for a

given but uncertain period, and in a lesser or greater degree, must experience health and disease, and ultimately death, either through casualties not always to be guarded against, injuries to the frame through misconduct, or corporeal weaknesses and imperfections in the animal machine, from its primordial conformation. The above interest will not be *equal*, but of course bear an inverse proportion to the prospect and probability, that each individual may have of a shorter or a longer existence. Sir JOHN SINCLAIR, Bart. in his intended publication on health and longevity, proposes, that one part of it should consist of regulations for the health of the community; and he has already endeavoured to impress his readers with the importance of his views, by the following allusion to the late mortality at Gibraltar. "The police of the Public Health is a most important branch of our proposed enquiry; and the events, which have recently happened in Spain, and at Gibraltar, have given it an additional interest." He then enumerates the general heads, under which it may be treated. (Medical and Physical Journal, No. 76.)

20. Mr. EDMONDSON, in his account of an epidemic ophthalmia, which he traced from Egypt to Gibraltar, observes, that "Modern physiology had done much towards explaining the laws of animal life;" and that "the changes which take place in the system in the different states of health and disease, are more accurately known, and better explained, now than formerly." Here it may with some propriety be remarked, that there are still so many parts, or functions, of the animal œconomy in a state of health, neither fully investigated, nor satisfactorily explained, that the difficulties in the way of esta-

blishing, either regulations for the preservation of health, or systems for the prevention and cure of diseases, may be readily admitted, and easily accounted for, particularly those connected with atmospheric changes. It would aid much the above philanthropic views of Sir JOHN SINCLAIR, if we could better understand the complex physiology and pathology of the skin, as an important organ of the human body, which, as acting in conjunction with the general functions of life, is yet, though anatomically well explained, but imperfectly as well as insufficiently investigated, notwithstanding the recent experiments and labours of the most scientific anatomists, and chemical philosophers. Let us however hope, that their prosecution of the subject will throw further light on this intricate part of the animal economy.

21. The science of medicine will be found not so difficult to attain, as the just and proper application of it to practice. After the many centuries of observations, which have been handed down to us from the time of Hippocrates to the present day, as a guide to the young practitioner, it is painful to observe, that the profession is still in an open sea, sailing in every direction to discover the tract most successfully leading them to the temple of Hygeia; and to the prevention and cure of diseases. In this sea of discovery on the present occasion, I acknowledge myself to have been much tossed about. General physiology and pathology have been my great guides. I have certainly laboured under the disadvantage of wanting the main pilot to a sure and safe anchorage—to wit, positive experience *at the scenes* of raging pestilence, to assist and confirm

my own practical reflections on the subject (1). I have therefore done the best I could, without having witnessed what the medical practitioners at Gibraltar have had the benefit of, if they should ever publish on the subject. Nevertheless, from some proper sources I have endeavoured to obtain the facts and observations resulting from their experience, which, I trust, will serve the place of the pilot of this my little adventurous bark.

22. I shall first attempt to express my opinion in what perfect health consists. Animal existence depends upon a certain immaterial part, THE SOUL OR MIND, joined to a material part, THE BODY. The nervous and vascular organization of the latter is importantly dependent on a just balance in its various functions, as connected with the former. A deviation from this due balance produces more or less disturbance in the mind or soul; and lays the foundation of the different degrees and kinds of sufferings and diseases, with which the human body is, through life, afflicted. When we enjoy a perfect state of health, we have none of those corporeal sensations, indicating to us, that *we* exist in such a material form. We are then all *soul*; and perform all the voluntary actions of this life, as connected both with mind and body, with the consciousness only of the connection, but without feeling corporeally the union. When we do feel it, we are then instinctively led to consider, as rational creatures, what such feelings are occasioned by: if natural we indulge them, when proper: if not proper to be indulged, we are morally in fault when we do; if morbid, we are then feelingly disposed to seek relief in the science and art of

medicine, in order to restore that disturbed balance in the corporeal functions and sensations, with which our soul in the state of perfect health is not sensible of being united. Perfect human health is, therefore, the enjoyment of animal life, and our reason, without the smallest sense of pain in the performance of the various corporeal functions connected with them; no otherwise than is the natural action of the organs, as suited to their several purposes. GARTH, in his Poem, "The Dispensary," when describing *health*, says,

" She seem'd a Cherub most divinely bright;
More soft than air; more gay than morning light."

23. I shall next add the opinion, which the great CULLEN entertained respecting the immediate source of animal life, as being, in a great degree, illustrative of the communion, *ab origine*, between the soul and body, and ultimately connected with the inquiry I have in view. In the first place, he supposed "the nervous system to be the origin of the soul, and therefore of animal life: and to be of such a nature, as to admit of an *aura*, a lymph, or fluid, for the communication of sense and motion from one part to another: but that this fluid was, at different times, in different conditions of fitness for this communication, which different states or conditions, he named the greater or lesser excitements; and which excitement he supposed to be that condition, when in the perfect state, which is the foundation of life and health." He further supposed, "that according to the degree of increase, or diminution of this excitement, would be the particular form of fever:" And as all the separate and component parts of the

nervous system have a communication with each other in their common origin, the brain, so he supposed, "that we might discover the variable changes of excitement in the brain, and the reason for its affecting the other component parts of the nervous system."

24. He further observed, "that as the principal parts of the animal functions were dependent upon the excitement of this system, so the preservation of life consisted in that excitement; and that a total collapse of the nervous power, after it has been once fully excited, was the cause of death." Thus, a due and proper excitement constitutes life and health; a morbid increase or diminution of it occasions disease; and the total collapse or extinction of it is the state of death. He conceived it out of his power to say "what at first began the excitement;" but he thought it evident "that, whatever the power it possesses in consequence of an original impression, life cannot be long supported without it." Thus we see, that although the soul and body be distinct, yet their motions are intimately connected during life.

25. Again, "It is well known," said the professor, "that there are various external powers, which increase and diminish the above excitement; and that many of the functions of the corporeal organs are requisite to keep it in proper condition." I therefore think the causes of death may be referred to one or other of the two following heads: viz. 1st. Either to such as act immediately upon the nervous system, or the brain, so as to disturb, or entirely destroy, the excitement. Or 2dly, to such as interrupt or destroy the circulation of the blood, or the

other functions necessary for the support of the nervous excitement. The first of these Dr. CULLEN considered as direct causes, the second as indirect causes, of death.

26. Dr. CULLEN concluded this brief explanation of his opinion respecting life and health, by observing "that death was not always the immediate consequence of a cessation of the circulation," for that a frog would live an hour or two after its heart was cut out: but that in time, from the cessation of the circulation, it would have destroyed the animal: only it would not then have been considered as the direct cause of death. Whereas, if the brain was bruised, or much shook, or the circulation through it in any way obstructed, or deranged, immediate death might probably be the consequence. Therefore the direct causes must act thereon, to produce a speedy dissolution. He enumerated, as among the principal direct causes, cold; the sedative passions, such as fear, &c. convulsions, such as the epileptic, &c. and sometimes the excess of joy; and electricity. Each of these have proved fatal by the sudden and great excess of excitement, caused by them, being immediately followed by an excess of collapse; all which, when they do not immediately, or very quickly, destroy, may be the cause of subsequent fever. Notwithstanding all this, Dr. CULLEN did not consider compression of the brain, as the cause of death in febrile pestilential disorders.

27. I ought not to omit in this place to briefly mention the fundamental principle of the Brunonian doctrine, with a few remarks on it, leaving my reader to apportion the weight and

consequence of either, as connected with the human economy, in the general scale of medical science and improvement. Health, disease and death, must have an immediate interest in the said principle, which is, "that a determined portion of excitability is assigned to every individual at the commencement of his existence." And it has been further advanced by DR. BROWN, that "the common effects produced by the exciting powers are sense, motion, mental action, and the passions; which effects being one and the same, it must therefore be granted, that the operation of *all the powers* is also one and the same." "The effect of the exciting powers, acting upon the excitability, is excitement." These opinions are however very well combated by the Editors of the Edinburgh Medical Journal, who have pointed it out as unfortunate for the Brunonian system, "that the author has made no provision in it for the recovery of exhausted excitability." This charge has therefore been brought against its consistency; and in order to make the imperfections of this system more fully appear, they have observed, "that some passions of the mind are highly exciting, and others are evidently depressing; but that, as a direct sedative had no place in the system of BROWN, the passions having this effect had been sacrificed by him." He seems to have advanced, "that the depressing passions have no real or positive existence, and have only been considered by him as negations merely of the exciting passions." "Fear and grief," said he, "are only diminutions, or lower degrees of confidence and joy." As more immediately pointing to our subject, it may be proper also to observe, that BROWN, consistent with his principle, considered, "that contagions were stimulant in their mode of operation."

This opinion has also been very fully canvassed by the Editors of the Journal, and I think very properly; they having questioned, among other things, that "the great *debilitating energy*, observable in *certain contagions*, does not more prove a diversity of action in them, than it does in the case of an equal or greater degree of debility arising from cold." But, in order fully to comprehend the reasoning of the Editors on the subject, I must beg leave to refer my reader to the third number of the Journal.

28. The Editors have further admitted, as an improvement of the present age, that in the room of the metaphysical, mechanical, and chemical theories of the last and preceding centuries, the physiologists and pathologists of the present day, "seem more prudently disposed to regard the powers of muscular motion and of sensation, as ultimate facts in physiology," on which I trust, through future observation and experience, will be founded, a more successful theory and practice, "by a *just* investigation of their laws and conditions of action." Spight however of this acknowledged improvement, when drawing their strictures on the speculative dogmas of the Brunonian system to a conclusion, they say "the doctrine of excitement, the laws of excitability, and the theory of the operation of the exciting powers, as taught by BROWN, have appeared inadequate to the explanation of the phenomena of life, of the actions of the natural and hurtful powers, and of the operation of remedies :" and they finish their criticism of BROWN's works at large with observing, that "the doctrine of excitement, even if the laws of excitability were fully ascertained, would still be imperfect as

a theory of life, which must also include the doctrines of the chemico-material processes, constantly operating in the systems of organized beings."

P. S. In treating my subject in the several sections constituting the first part of my work, I shall occasionally introduce my own particular *doubts* and *opinions*; but I beg that *they* may be generally received as founded upon those principles and sentiments, which formed and supported the Cullenian doctrine, lamenting, that the present state of medical science, notwithstanding its improvements, cannot further assist me. It should, however, be observed, that as the science of life is daily acquiring new votaries, all aiming at the promotion of its perfection, much more may be discovered, which will add to our present means of *prolonging life*, of *preserving health*, and of *curing and alleviating disease*. The deep and extensive views and researches of Sir JOHN SINCLAIR, Bart. before alluded to (19) must greatly tend to an amelioration of the comforts of society, and to an alleviation in general of the variegated miseries of mankind. It is on this ground to be hoped, that, in process of time, a complete elucidation of the *arcana* of human existence may insensibly lead the attentive mind of the medical practitioner to a clear investigation of those hitherto dark and dangerous afflictions, which are daily terminating the life of man, at all ages, and even in the most civilized parts of the globe. That the illustration I have in view may be the more readily comprehended by the younger members of the medical community, has been my motive for commencing with some general remarks on the MODERN STATE OF THEORY, AND PRACTICE IN FEVERS.

OBSERVATIONS, &c.

PART I.

ON GENERAL PRINCIPLES CONNECTED WITH THE PATHOLOGY OF PYREXIAL DISEASES.

SECT. I.

ON THE CAUSES, SYMPTOMS, AND VARIETIES OF FEVER.

29. MANKIND has most probably been doomed by original fate to be exposed, at some time or other of their lives, to fevers arising from specific miasmata, and they severally seem to be particularly connected with the different organs or functions of the system. There are some grounds therefore for suspecting, that all the several vital and animal organs of the human frame must have been originally intended to be made subject to the effects of some specific atmospheric action, or contagion, once in the progress of life. Such are the small-pox, measles, chicken-pock, chin-eough, &c. which, as arising from specific contagions, connected with the atmosphere, must, I presume, have existed from the beginning of the world. It may however have been ordained at the creation of things here, if we can be allowed to freely reason *a priori*, that certain specific human contagions should be inherent in the natural constitution of man, and should afterwards become indirectly epidemical from one part of the world to another, through the necessary eommunieation of the animal economy with the atmospheric air, on every part of the habitable globe. The *arcana* of human existence, and of human sufferance,

will justify any conjectures on this intricate subject; for the doctrines of contagion are still involved in much obscurity, through our still imperfect acquaintance with the theory of life, as just alluded to (28). How far the febris scarlatina, as an exanthematous disease, will come under this consideration, may be made a question. Though arising apparently from a specific contagion, and strongly epidemic at times, and supposed also to affect us but once in our lives, it is not so common, as the other disorders just mentioned. It has been unfortunately sometimes not distinguished from the measles: I have known the latter to have been mistaken for the former, though an angina particularly characterises the febris scarlatina. **CULLEN** had observed this species several times regularly epidemic in Scotland. The cynanche maligna has been of late considered as a modification or variety of it.

30. I feel it very difficult to fix the limits of general observations, and am unwilling to compress the subject too much, because I think the young practitioner will find his account in having the principal leading circumstances of fever pointed out to him, preparatory to my immediately entering upon the object of my enquiry, as such will open and prepare the mind previous to my investigating the particular nature of the Gibraltar disease. I cannot therefore do better than give, as briefly as possible, the general outline of fever, with all its collateral points, which seemed to me so satisfactorily admitted, as evidence of the Cullenian doctrine. Here allow me to introduce the words of Dr. **BLANE**, in his "Observations on the Diseases of Seamen," when he alludes to the just application of Dr. **CULLEN**'s doctrine, respecting the re-action of the system, as they so much accord with my sentiments of his departed worth and talents. "I am happy in the opportunity," says Dr. B. "of acknowledging my obligations to this worthy professor, to whom the medical world in general is so much indebted, as well for the rational views of the animal economy, which he teaches, as for that spirit of study and enquiry, which he infuses into the minds of his pupils." I will therefore

proceed, confident of my reader's approbation of the plan I adopt, and of the preceding motives.

31. I shall first observe, that of all the morbid affections, to which our natural or material existence is in this world exposed, none is of greater extent and moment, or more often fatally experienced by mankind, than the class of pyrexial diseases, and particularly the *febres* of CULLEN's nosology. They spare neither age, nor sex, and have ever been at times most mortally prevalent in every quarter of the globe. GARTH, in the poem before alluded to, has very emphatically described the universality of those maladies in the following lines, in fictitious allusion to their dwelling-place; and gives them pre-eminence of extent and mischief over all the other disorders.

“ Within its dreadful jaws those furies wait,
“ Which execute the harsh decrees of fate.
“ FEBRIS is first: the *bag* relentless hears
“ The virgin’s sighs; and sees the infant’s tears:
“ In her parch’d eye-balls fiery *meteors* reign,
“ And restless ferments revel in each vein.”

CANTON VI.

32. The paroxysm of a fever consists of three states, and may prove diurnal, or continued, according to the operation of the remote cause. 1st. The state of nervous debility. 2d. The state of spasm or constriction. 3d. The state of increased action of the heart and arteries. The intermissions, exacerbations, and remissions, are differently marked, and of more or less extent in different fevers.

33. Fever commences with (more or less of) horror, tremor, and rigor: they are marks of the loss of tone, or balance between the nervous and muscular powers, and the less they are felt, the greater is the subsequent fever. Why should debility be supposed the first operating cause of fever? The opinion can only be founded on the supposition of the re-action it excites, in order to restore the lost or disturbed balance in

the circulation. The remote causes of fever producing this debility are ever worthy of consideration. They may with propriety be considered as poisons, which weaken the nervous power, and energy of the brain (23 et seq.) Of the principal of these I shall speak more at large hereafter.

34. There is one organ of the body particularly affected at the attack of fever, from its established sympathy and connection with the whole system, to wit, the stomach: so that the nausea and vomiting at the commencement of fever, are the effects of sympathy with either the general debility of the system, or with some local affection; and do not ordinarily arise from foulness of the stomach.

35. The state of the bile has been supposed by some to be the most probable cause of fever. Its presence however, as we generally see it, is certainly only symptomatic. On this account, emetics may often be dispensed with, particularly after the commencement, or complete formation, of the fever: and when the nausea and vomiting continue beyond the commencement of the fever, lasting for several days, perhaps a week, they are the symptoms of sympathy, and should point out to us, from the observations I have myself made in practice, a suspicion of some local inflammatory affection existing in some one part or other of the body.

36. Though horror, tremor, and rigor, are generally to be considered as the effects from cold, by producing debility at the attack of fever, yet such effects will often be alone produced by the passions of the mind, as fear, &c. which, spight of the Brunonian doctrine, are all "affections equally positive and independent:" and it may be proper to observe, that tremor, while it arises from debility, will bear a proportion to the subsequent spasm and power of re-action. Tremor, in fact, has been considered as the beginning of spasm. It is of a paralytic nature: and when the horror, tremor, and rigor do not take place, it argues a want of proper exertion in the system to overcome the debility, and consequent derangement in the circulation (22).

37. Further, it is proper to observe, that the affections of the stomach, even at the commencement of some pyrexial disorders, are not to be wholly attributed to the occurrence of debility and spasm of the extreme vessels, agreeable to the Cullenian doctrine; but may be viewed as properly establishing a just ground for seeking out a local affection, with which the stomach sympathises soon after it has taken place.

38. There cannot be a better proof of the probability of vomiting in fevers proceeding from either a general nervous cause, or a local affection, through an established sympathy between the stomach and the rest of the system, than what so frequently happens after blood-letting: namely, the *deliquium animi* and sickness. The vomiting also, which is so commonly produced by a blow on the head, is a further proof of a mutual sympathy and connection; and when there are just grounds to apprehend any local affection exciting it, we should be cautious in administering emetics. For it should be remembered, that severe vomiting is at all times liable to prove hurtful, under any local congestion (35).

39. Fever has, by many writers, been considered to arise from the state of the bile; and SENAC, with others, as just noticed, thought it the most probable cause of fever. Yet he over-turned his own doctrine, by saying, "that the greatest redundancy of bile might not only exist in the system, but even be thrown out of it without producing fever." There is certainly a proof of this in icterical disorders, they being generally un-attended with fever. I consider the liver as most liable to chronic disease, though occasionally to inflammation. CULLEN even admitted, that though the bile is not necessarily the cause, yet that in autumnal fevers, a redundancy of it might occur, and aggravate the disorder.

40. A redundancy of bile is most apt to produce intestinal complaints: and it may with justness be observed, that patients prone to be afflicted with biliary disorders, such as the autumnal dysenteries, are least liable to fevers. It may therefore be advanced, that the cause of fevers, and that of dysenteries,

must be very different. I am of opinion, that they both may arise from membranous inflammation of the primæ viæ, occasioned by the acrimony of the bile: I mean, both the autumnal fevers, and the dysenteries, the febrile symptoms then proving symptomatic only of the local affection.

41. A perfect state of health depends on a just balance between the heart and all parts of the circulation, (22); particularly between the external and internal extreme vessels, or the extreme parts of it: while fever, as a deviation from a state of health, is characterized by, and most probably arises from, some derangement, or alteration in it. Thus pyrexial diseases are distinguished from other diseases by the frequency of the pulse, marking an increased action in the heart and arterious system (266).

42. The febres of CULLEN's Synopsis Nosologiæ Methodicæ are characterized by the pyrexial symptomis being independent of, and unaccompanied by, any local or topical affection (267). The other febrile disorders of CULLEN's class pyrexia, as enumerated in the four subsequent orders of the Synopsis (270) are distinguished from idiopathic fever by their local and topical affections, and from each other by the difference of those topical affections, namely, as either being phlegmasial, exanthematous, profluval, or hæmorrhagic.

43. The length or duration of fever depends upon the natural nervous energy of the system continuing in a partial state of debility, or collapse, independent of the peculiarity of the vascular temperament, or of the mode of attack, or of the proximate cause; and may be protracted, even for a length of time, after any local affection is subdued.

44. Proper pyrexia depends upon congestion in the arterial system; and it will equally explain the principal phænomena of inflammation. And it is, moreover, this conjection, which produces that irritation, or constriction in the arterial system, which gives rise to the diathesis phlogistica, or inflammatory diathesis. The truly continued fevers are always more or less accompanied with the inflammatory diathesis.

45. The accurate Dr. CULLEN has observed "that pestilential fevers are sometimes suddenly fatal, from excess of debility at the attack; and sometimes, but rarely, the same excess has destroyed on the attack of an intermittent." Whether a local injury is the immediate cause of such sudden death, on both these occasions, I may hereafter attempt to explain. CULLEN even conceived, that *sudden* death during the hot fit, took place on the same principle.

46. I shall describe shortly the character of an inflammatory fever, as to the predisposition to it, its rise, attack, and progress, as such will be applicable hereafter to the purpose of my work. This may be considered the synocha both of SAUVAGES and CULLEN;

This fever is most common in cold seasons and climates, and generally attacks those of a robust and sanguine constitution: and such as are liable to haemorrhage. It attacks suddenly, and with little languor, and does not proceed from contagion. There is little of horror and nausea, and the cold fit is very short. The face soon becomes florid and turgid, and is accompanied with so great an increase in the action of the heart and arteries, as generally to cause some degree of deliquium. The hot fit soon succeeds, and is attended with head-ach and throbbing of the temples, pain of the back, and the joints of the extremities, and a frequent, though not difficult, respiration. The pulse is full and quick; the thirst considerable; and the urine is high coloured and without sediment. Such a fever is of uncertain duration, seldom, however, exceeding a week, varying, according to its termination by haemorrhage, sweat, or urine. The exacerbations and remissions in this kind of fever are very obscure.

47. It will also be found necessary to the purpose of my investigation to contrast the preceding account of an inflammatory fever with the ordinary description of the attack and progress of the nervous fever, or typhus: as follows.

The typhus is said to be the product of warm climates and seasons, and to arise from contagion. Those persons

much weakened by cold, or any other debilitating cause, are most liable to its attack. It comes on slowly, and is gradually attended with loss of appetite, anxiety, languor, and lassitude. At the approach of night, a sense of cold and chilliness, with slight horror, takes place. The patient becomes hot in bed, and the sleep is confused. The symptoms nearly go off in the morning, but come on again at night, and the hot fit becomes stronger. This kind of fever gradually increases for several days. The heat is moderate in the day-time, with a pulse frequent, but not hard. The animal functions become much impaired. There is a despondency of mind, an anxiety, nausea, vomiting, and total loss of appetite. The sleep becomes variably disturbed, and delirium soon succeeds. The heat of the body becomes unequal: the lower extremities are generally more or less cold: the face grows pale: the belly becomes irregular, and the urine limpid and clear, without sediment. The exacerbations and remissions become obscure, and, the fever is protracted two or three weeks, or more, without any sensible crisis. The general symptoms are such as point out a debility of the sensorium, and can only be explained by a prevailing debility in, or *some derangement* of, the primary functions of the brain.

48. Fortunate would it be for mankind, and most gratifying to the profession, if fevers, admitting that there was no local cause for them, could always be so characteristically marked and distinguished; for the treatment of them would then be plain, and eventually successful. But the oldest practitioner must allow, that their phenomena alter so much, and are so variously mixt and combined, from a difference either in the operation of the remote causes, or in the predisposition and temperament, or in being connected with some hidden local affection not suspected, that the most judicious administration of medicine will fail, when ultimate danger had been but little apprehended. From this variability of character, and distinct from the supposition of local affection, nosologists have established a third genus of fever; the synochius,

which, ordinarily speaking, first puts on the appearance of inflammatory fever, and soon after acquires the low nervous type.

49. Further, fevers have been supposed, by some writers, to have their origin principally in the admission, or absorption, of contagious miasmata. When such is the case, a ferment is then supposed to be produced in the circulating fluids, which communicates contagion to the whole system, the multiplication of which produces that particular fever, called the putrid. This may be the sequela or termination of the others; and as there are certain diagnostic signs of a putrid fever, it may be proper, for the main object of this work, to point them out. However, I must observe, that I think the sound and natural crasis of the blood is not so much changed, as teachers generally have supposed. The phenomena may admit of a different explanation.

50. In the putrid fever, the blood drawn from the veins has been observed not to coagulate, and the serum of it is said to be reddish,—that blood will rush out, without any external cause, from the gums, nose, ears, eyes, and lungs, without any pain. Bloody stools will occur without any diarrhœa; and the urine will be bloody without nephritic complaints. It has even been advanced, that blood has oozed through the pores of the skin. But that particular marbled appearance of the skin, formed as it were from an infinite number of purple spots, has been said to be occasioned by blood extravasated into the rete mucosum, and seen through the cuticle. These spots or appearances have been distinguished by the term petechiæ: But, from what I have witnessed, the true petechial spots do not put on that marbled or mottled appearance of the skin, which is so frequently seen without fever; this appearance may be very often noticed as a strong mark of health, and certainly depends at the time upon a peculiar condition of its vascular structure.

51. The highly putrescent state of fever is further said to

be accompanied with a fœtid breath, fœtid stools and urine, and an extremely cadaverous smell of the whole body. The putrid fever may be considered as a species of the synochus, and becomes more or less malignant, according to the preceding degree or prevalence of the inflammatory or nervous symptoms. Even this putrescent state will cease increasing after death, unless the heat of the atmosphere is excessive: which proves, I think, that contagious miasma cannot be the sole support of putrescency, as a ferment.

52. It however has been received as a general observation, that whatever the symptoms of putrescence may be, the putridity most probably arises, (if general opinion can be depended on) from contagion received into the system by means of a particular effluvium, which may at the same time act both as a sedative and a stimulant, and thus first produce the synochus, and then the inflammation: and CULLEN used to assert very positively, "that all fevers arising from human effluvia, would be attended with more or less of the typhoid character." But he found in his day, and it is I believe much the same at present, that the difference of marsh and animal effluvia was, and still is, much disputed: and if he had been living now, would himself have admitted, that the doctrine of contagion is not carried to the extent it was formerly: though I believe the alarm of it is still more frequently given, than it should be.

53. Putrefactive vapours are not alone detrimental to the human body. They require more or less of the operation of heat and moisture, to render them deleterious: and therefore such fevers are not often met with in cold seasons and climates; or if ever such prey upon the human frame, in such seasons, it must be, when the excess of cold may have considerably debilitated the body: and too much of the inflammatory diathesis has prevailed.

54. There is so intimate a connection between inflammatory fever, and the phlegmasiae or local inflammatory affections, that it is difficult, from the symptoms at the commencement, to determine which has been the primary affection, or disease;

and therefore it will require some study and reflection, with a minute attention to the symptoms, to find out which has been the idiopathic complaint. On a happy discrimination in this respect depends the success of our advice and treatment. It may be further observed, that fever is most probably idiopathic, when it continues after the disappearance or cessation of the inflammation, or local inflammatory affection. The exanthematous affections connected with fever generally depend upon specific contagion, such as the small-pox, &c. When active hæmorrhages occur in fever, they are to be considered as symptomatic, or consequential to them. Let not partial hæmorrhages lead the young practitioner astray, by his supposing them to have any connection with a putrid disposition of the habit. This may be easily apprehended in tropical climates under the plethoric state of the system (50).

55. As I believe nosological science is not so much cultivated in the schools of medicine as formerly, at least has undergone no improvement or particular change of late years, it may be sufficient to my present purpose to say, that the pyrexia and the febres of SAUVAGES are synonymous terms. LINNÆUS formed no distinct class of pyrexia: But his class febriles, and SAUVAGE'S febres, are both the same with CULLEN's pyrexia. VEGEL'S system of fevers came nearest to the class of pyrexia laid down by Dr. CULLEN.

56. Those, who are watchful of the progress of fever, will often observe, that diurnal habits are much connected with febrile diseases, and to them the daily exacerbations and remissions in fever may in part be attributed. These are on some occasions quite obscured; and are probably more particularly so, when the fever is syniptomatic of some local affection. But the greater proportion of fevers have certainly been attributed to atmospheric changes, and other aerial causes. Dr. RUSH has ventured to almost assert, "that we are compelled to resort to certain noxious qualities of the atmosphere, as the exclusive causes of the prevalence not only of the yellow

fever, but (with a few exceptions) of all other epidemic fevers. Yet, disposed as he now is to combat the doctrine of contagion, (4) and to attribute the spreading of the yellow fever to the exhalations from putrid matters, which are diffused in the air, he has candidly acknowledged, "that we are yet ignorant of the precise nature of those qualities in the air, which produce epidemics." Unfortunately this frank confession is too well founded, and justifies the intention of the present undertaking.

SECT. II.

ON CONTAGION, COLD, AND FEAR, AS CONNECTED WITH FEVERS.

57. It is proper to point out the following distinctions in the febres, or idiopathic fevers, as marking the different species or kinds of them. They have been considered either as epidemic, endemic, contagious, or sporadic; but the distinction is generally lost, or confounded in practice, with the general term of the typhoid or malignant fever. The truly inflammatory fever has been supposed rare, and not of the contagious or malignant nature: but is not so rare as generally supposed.

The terms above-mentioned are thus applied.—Epidemic and endemic, or indigenous, pertain to the atmosphere; contagious and sporadic, to the human body. But contagion is sometimes spoken of as an epidemic vapour arising from the human body: so that I think it may fairly be concluded, that contagion and miasma must be sometimes complicated, or have degenerated into one another: and I believe that disease, which is truly endemic in tropical climates, from the atmospheric state, is not properly of miasmatous origin.

58. As epidemic vapours are not natural to the atmosphere, they have been called miasmata, or *inquinamenta aeris*, that is, not as the proper component parts of it, but as an acquired

ordure or defilement of it. Vapours from diseased bodies constitute contagion. But, when they are (*originally*) resident in the air, and have arisen from animal or vegetable matter, they are then called miasmata. Miasmata may very naturally be disposed to be various, but that with which we are best acquainted, is the miasma, which arises from marshy grounds, and places liable to inundations, and is produced always by the concurrence of heat and moisture,

59. Heat will not produce this miasma, provided the earth be at the same time dry: nevertheless, epidemic disorders have been supposed to rage in climates under such circumstances. Neither will moisture alone produce it; as it is never produced from pure lakes and seas. This is sufficiently proved by the annual effects of the flowing of the Nile. However, that vapour, which is generated from filth, and confined heated air in gaols, hospitals, and all partially ventilated places, partakes, I should suppose, of the nature of contagion, rather than of miasma.

60. In general, the miasma arising from marshy grounds is looked upon as occasioning fevers of the intermittent kind, and probably the autumnal tertians in all countries, which may often be considered as tertian epidemics. These may, by a too heating regimen in a hot climate, become the bilious remittent fever, and terminate fatally. When marsh miasma produces the intermittent, there is reason to suppose that it has its operation through the nervous system; and when the autumnal tertian has been converted into the bilious remittent fever by a too heating regimen, I imagine an enteritis, or the inflammatory state of the primæ viæ, has been occasioned, accompanied by a fever bearing the character of a synochus (48).

61. As contagion is so much the theme of public apprehension, I shall add some further opinions respecting its general character, and application to disease; but the subject is too diffuse to introduce every thing, which has been said upon the subject. The origin of epidemic and endemic disorders has been supposed to arise from the atmosphere, by the

inhalation of a vapour, which has been called miasma. This miasma on some occasions may have been converted into contagion, and may have also undergone some further alteration, by its communication with the human body. Contagious are not however so various, as has been generally imagined. They commonly act in producing either exanthemata or profluvia, diseases of a specific local character, such as the small-pox, measles, chin-cough, dysentery, &c. and from their known property in always producing the same disorder, have been deemed truly specific. The specific contagiousness of dysentery may however very reasonably be called into question. But febrile atmospheric miasma being supposed capable of change by communication with the human body, so as to become contagion, cannot be considered as specific, unless admitted to vary in their effects from difference in human temperaments.

62. But I believe there is reason to apprehend, that some fevers from atmospheric causes, particularly those on the Continent, and fevers from human effluvia, essentially differ, so as not to be mutually epidemic or contagious, on the same principle, being not of the same genuine character: And, in regard to those fevers, arising either from true marsh atmospheric miasma, or the human effluvia, it may admit of a question, whether their difference of character does not as likely arise from a difference in the predisposition and temperament of those infected, as from any essential difference in their specific qualities, as infections.

63. Though the contagion of the small-pox has unquestionably a specific origin (29) yet it even produces very different degrees of disease, which must either arise wholly from the difference of excitability, or temperament, or be, in some mild epidemic seasons, more pure from communion with any other atmospheric miasma. Therefore the great variety of epidemic fevers, as recorded by some authors, must surely be founded in difference of constitution, and not in any essential

difference in the specific qualities of either atmospheric or human effluvia.

64. It has been supposed that the origin of epidemic fevers may be traced from one species of miasma only, namely, the marsh effluvia, because no other than this has been known, or from local circumstances discovered: but I even think the discovery of this is too often fanciful and imaginary. It will not however account for the intermittent and remittent fevers, and other febrile affections of the low nervous kind, which are so frequently met with in this metropolis, and other large cities. It is therefore fair to conclude, that all contagions, which are not of a specific nature, arise from one common source, though difficult to be traced, and that they are probably uniform in their effects, from some particular property acquired by heat, and their communion with the human body; but that the variety of fevers arising from such source, depends on the habits of life, and peculiarity of constitution, of those infected.

65. It would be happy for mankind, if we could reduce the system of epidemic fevers to a more limited and defined compass: But, we must be cautious how we proceed in generalizing and simplifying the nature and species of diseases arising from contagion. Dr. CULLEN thought, that the genuine contagious human effluvia adhered very tenaciously to the walls of houses, ships, furniture, and our garments, and that it therefore might affect people at a very great distance from the place, or time of its first operation: (52) Yet, he observed, that this "species of human effluvia generally acted more powerfully as a miasma than a contagion." He particularly observed, "that medical men, though often exposed to such contagion, were seldom affected by it." This he attributed in a great measure to the force of habit; but gave this cautionary advice, "that if they would not sit on the bed of the patient, they would stand a greater chance of avoiding it;" for he thought it adhered more strongly to the bed cloaths, than even to the human body. If I should however succeed in my investigation of the Gibraltar disease, it will very much alter the opi-

nions so generally entertained of contagion, and contagious fevers, both as regarding the life of man, and the commerce of all countries: and in the end fully establish the doctrine of non-contagion (4, 8).

66. As the operation of cold on the human body is so generally admitted to be a cause of fever, a few remarks on it must be pertinent to our subject, and future enquiry. When cold alone affects the body in a sound state, it produces pyrexial disease, that is, a disease of the febrile or inflammatory kind; though excessive cold, by occasioning debility, may lay the foundation of a low nervous fever. Its ordinary operation is the production of the slightest or least dangerous fever, such as the synocha: and of catarrhal and inflammatory affections; such as rheumatism, &c. The most common consequence of its occasioning a suppressed perspiration, is a revulsion to the fauces, and the bronchial glands; and though cold is considered as the common cause of fevers in this country, and sometimes of very dangerous ones, it is however suspected not to be productive of such, or of any epidemic fever, simply through debility and spasm succeeding, unless the more frequent causes, contagion or miasma, have been previously taken into the body. In however the epidemic seasons of tropical climates, I think fevers must occasionally occur in the midst of universal pestilence, (such as happened at Gibraltar) from the operation of cold, on the principles I shall attempt to establish, particularly when strongly marked by the inflammatory diathesis.

67. The operation of cold may be questioned, as to the production of the gaol, hospital, ship, and pauper fevers of this climate: though the poor and lower orders of society are most liable to a kind of contagious-malignant-endemic in the metropolis, and other large cities, (connected certainly with human effluvia in a limited degree) because they are most exposed to cold, and every other particular cause, which may debilitate them. This has led so many to consider cold as the common, or sole cause of fevers in this country, from its fre-

quent connection, as a remote cause, with some of an epidemic character. But the predisposition to such fevers is caused by excesses of every kind ; and when these occur in conjunction with grief, or great evacuations, they occasion the severest kind of fever : hence the rarity of the synocha of **CULLEN**, or true inflammatory fever.

68. It is essentially necessary to my intended enquiry, that I should set down some remarks on the operation of fear, as a remote cause of fever. It acts very powerfully on the system, and is singular in its effects. It evidently weakens the whole frame, and strikingly deranges the balance of circulation between the external and internal extreme vessels, by its nervous operation on the heart itself (41). Hence arises a sudden palleness of the whole surface of the body; and a proportionate fulness and congestion of blood in the larger vessels ensue : and this has sometimes occurred to so great a degree, as to occasion immediate death. When by a lesser degree of its operation it fails of so suddenly destroying, it affects the system as a sedative, which condition is sooner or later succeeded by an increased action of the heart and arteries. This is the ordinary acceptation of fear as a remote cause of fever.

69. The observations of the great **CULLEN** on this interesting subject were as follows. "Fear has," said he, "evidently the power of diminishing the energy of the system, and thereby of producing that debility and spasm, which are the foundation of fever: and according to the extent of its sedative power, it may prove the cause of fever of any degree of violence or duration :" But whether it actually does prove such, he would not positively affirm. But I believe it to be very certain, that it greatly predisposes the body to the infection, or influence of the supposed miasma, and thus may become, as the exciting cause, the foundation of the most dangerous fevers. Even **GAUBIUS**, as **CULLEN** observed, took notice of this in his pathology. It also equally predis-

poses the body to the operation of other causes, producing, according to the nature of the cause, a particular kind of fever.

70. Dr. CULLEN further observed "that fear afflicts us the more deeply according to the interest the object of our fear bears in our affections. It therefore operates not on particular constitutions, but according to the disposition of the mind." In this way, the Professor accounted for epidemics seizing families, and intimate acquaintances, from the particular concern and apprehension excited among them: And, on the same principle, such an epidemic fever would spread on board of ship, if an alarm was given; for, according to the new opinion on contagion, which Dr. RUSH has recently conceived (75), infection would not spread at sea solely from a person who sickens and dies there, after having brought the seeds of it in his own body from a sickly shore, for these reasons among others, namely, "that the crew would not be under the morbid operation of fear, or fatigue." (See Medical Repository, vol. VI.)

71. The operation of such a depressing cause as fear cannot be resisted. Its effects have nothing to do with constitution; and only secondarily with an epidemic, or pestilential atmosphere. But the vigour or power, and courage of the system, are such at times, as to resist the operation of a deleterious or miasmatous atmosphere. In what is this vigour or courage supposed to consist? I believe it can only be answered in the negative way. It is not placed in the animal functions, nor even in the state of the sensorium, nor does it depend upon the weight of muscles a man is possessed of: neither has it any particular relation to sex, or age.

72. But the deleterious effects of the air may be resisted, by guarding against the ordinary concurrent causes of excitability or predisposition; such as cold, intemperance, excess of other indulgences, &c. all tending unfavourably to dispose the body to its operation: and therefore much may be done on these points, presuming every degree of fear to be absent,

by attention to regimen and diet: Yet I should apprehend, spight of the strictest attention to counteract all the predisposing causes to fever, that miasma would be constantly generated, if it existed at all, or if it was so readily multiplied, as teachers have advanced, by a fermentative process in the human body. I shall find occasion to speak more at large on the subject of fear, as a remote cause of fever, when I notice its immediate connection with, and operation on, the sensourium and nervous power.

SECT. III.

ON THE AIR, THE PULSE, AND ANIMAL HEAT, AS CONNECTED WITH FEVERS.

73. The influence of the AIR in the production of fever, merits a few select observations. The variety of epidemics is not so great as many writers have supposed, so as to render the problem, which teachers have advanced, altogether inexplicable. When an epidemic fever affects a great number of people at the same time, it must be occasioned by one common cause, namely, either by the condition of diet, or the state of the air. But the variety of aqueous drinks, our common beverage, is not so great as to be a cause of endemic, much less of the apparently epidemic, fevers. It is however more likely, that in the time of famine, many things may dispose to the propagation of either atmospheric miasmata, or human effluvia; as such a lamentable season would, in a general way, give rise to every evil, that would naturally follow at any other period, from poverty and uncleanliness. But though these are circumstances of the most unwholesome tendency, we must, after every investigation and enquiry, seek for the general cause of malignant-epidemic-fever in the state of the atmosphere: particularly in a suddenly raging pestilential season. The enquiry is however still *sub judice*, and

therefore with propriety I may notice the prevailing contentions of the present day on the continent of America. Dr. STRINGHAM, of New York, does not agree with the Editors of the Medical Repository, "that the yellow fever of that climate was produced by a modification of the constituent parts of the atmospheric air; and that the change was first evinced by its influence on other diseases." This respectable professor, from his experience, and his experiments, could not discover any change in the atmosphere of New York at the time of the fever, that is, so far as respected the atmospherical proportion of oxygen, azote, and carbonic acid; there being, to his observation, no perceptible difference between the atmosphere of such infected situations, and that of places which were several miles distant.

74. Other most ingenious and experienced pathologists have differed on this subject. Some have supposed fever to depend more upon the insensible than the sensible qualities of the air: but from our knowledge of the latter we are best able to draw our conclusions. Fever is therefore more generally supposed to arise from its sensible qualities, as its heat, coldness, dryness, and moisture: but it may also, with the aid of concurrent remote causes, be excited by its insensible qualities, namely, matters with which the air may be impregnated: yet such may be no ways concerned with endemic malignancy. The properties of the air termed gravity and elasticity, have also been considered as having no share in the production and support of genuine fever: And of the sensible qualities, heat, in conjunction with moisture, has been considered as the chief cause of pestilential fever. I shall, in a future part of my work, have occasion to notice the particular new opinion of Dr. DOMIER, respecting the cause of the pestilential state of the atmosphere.

75. It has been advanced, that a dry season, by diminishing exhalations, prevents the evaporation of noxious effluvia from the earth; and may therefore occasion the most healthy season. This may in some climates be the case: but I shall,

in its proper place, have occasion to observe, that great stress is to be laid on the influence of heat alone in tropical climates, at the commencement, as well as during the raging, of an epidemic. After all writers have given full conviction, that pestilential fevers, which have continued to return violently, for some successive years, at particular seasons, were always modified or varied by the vicissitudes of the season, and the temperature of the air. It is therefore pertinent to my subject to introduce the following facts, from which Dr. RUSH has inferred, "that the yellow fever is propagated by means of an impure atmosphere, at all times, and in all places."

1. It appears only in those climates and seasons of the year, in which heat, acting upon moist animal and vegetable matters, fills the air with their putrid exhalations.
2. It is unknown in places, where a connection is not perceptible between it and marshes, mill-ponds, docks, gutters, sinks, and other sources of noxious air.
3. It is destroyed, like its fraternal diseases, the common bilious and intermitting fevers, by means of long continued and heavy rains.
4. It is completely destroyed by frost.

"These principles, according to Dr. RUSH, explain several facts, in the history of the disease, that are inexplicable upon the principle of its specific contagion." (Ed. Med. Journal.)

76. On the whole it appears, by the writings of scientific pathologists, that the variety of epidemics arise from one or more of the following principal remote causes, namely, cold, marsh effluvia, or human effluvia; and that they become more or less virulent, according to the concurrence of ordinary and occasional causes. I shall beg leave to add my opinion, that heat alone will be found equally entitled to the distinction of a principal remote cause. We are, however, to consider contagion, generally speaking, as admitting, with propriety, of being divided into specific and common: But this division will not account for every variety; and it is from the almost indescribable admixture of other operations on the human body, that the innumerable species of fevers arise.

77. There are few, comparatively speaking, which occur from specific contagion; but they are well known, and scientifically treated; such as the small-pox, measles, chin-cough, &c. and have been considered "as produced by *secreted* matters." We remain yet out at sea respecting the specific nature of the *truly pestilential* fevers, of which kind we are not to reckon the gaol, ship, or hospital fevers, they being very limited in their communication from one person to another, according to Dr. RUSH, "as arising only from *excreted* matter," as human effluvia (70). It will afford me much satisfaction, if, by my intended view of *these disorders*, I should throw any better light upon such hitherto destructive maladies; so often fatal to the human race in various quarters of the world. I feel, however, clear of one thing, that it is only from an accurate observation of the various appearances which the different fevers, in different climes, assume, joined to a proper enquiry into the mode of operation of all the remote causes, that we can ever be directed to the best and most certain method of cure, on any occasion in future, which may be similar to what so lamentably occurred in the autumn of the year 1804, at Gibraltar.

78. The PULSE, from the changes it is subject to, forms one of the principal characteristics of fever, and the circumstances pertaining to it most worthy of consideration are, its velocity, frequency, strength, fulness or size, tension, and regularity. A quick, and a frequent pulse, are not easily distinguished from one another. A frequent pulse is not alone a mark of irritation, for a state of debility will generally produce it. A pulse of 120 in a minute, does not portend danger. So also HALLER thought: but if it exceeds 120, it is a mark of irritation, with considerable debility. It has, however, been occasionally found in fever not to exceed much its ordinary frequency in health. But surely the case which Dr. MONRO mentioned to CULLEN, of a man's dying of a fever, whose pulse had not exceeded 80 in a minute, must have been

a wrong diagnosis. I should have suspected some direct cause of death on the brain, in such a case.

79. The frequency of the pulse in fevers, according to the writings of some pathologists, is not to be depended upon. From the immense variety of fevers, it must be expected greatly to differ in some constitutions. Most practitioners would suppose, that SAUVAGES had certainly erred, when he said, "that the pulse in typhoid fevers is, in respect to strength and frequency, much the same as in health." I have always found the peculiar frequency and nature of it, in the low nervous fever, particularly characteristic. CULLEN very justly observed, that there is a species of fever called the typhus comatosus, wherein it is slower than in health. From some cursory observations, which I have made in practice, I shall have occasion hereafter of noticing this particular exception of CULLEN.

80. The ANIMAL HEAT of the human body is so much connected with febrile states of the system, that a few observations may very properly be introduced. For a long time our theories, concerning animal heat, have been thought very inconclusive. It is however every where evident, that it is connected with the motion of the blood, and in fevers is certainly dependent on it. Increased heat points at the excess of stimulant power. Coldness of the body is a strong mark of debility, in some function of the system; and when accompanied with horror, is a symptom of febrile irritability. Sweating is an ambiguous sign of febrile heat. It has been thought to have its origin from nervous excitement, as well as from irritability of the heart and circulation; and when perspiration is very profuse, with even a coldness on the surface of the body, I believe it has its foundation in an opinion I have long entertained of a supposed cutaneous generation of animal heat, which opinion I published in my Treatise on Cutaneous Diseases fourteen years ago, and have seen no reason since entirely to alter it, nor did I ever meet with a fair confutation of it, in any periodical, or other work. In fact,

Dr. CURRIE has advanced, "that in the *production* of sweat itself?" previous to its appearance on the surface, "a degree of heat is absorbed." The variations of heat and sweating in fevers, much merit the attention of practitioners; and have, most assuredly, some connection with some disturbance of the healthy function of the skin. It is, therefore, extremely probable, since the attention of the chemical philosopher has been of late years so much given to the investigation of the cutaneous actions and excretions, that much useful information will at last be collected on the subject. I have read with much satisfaction, Dr. GEORGE KELLIE's "Historical and Critical Analysis of the Functions of the Skin," as an original communication in the second number of The New Edinburgh Medical Journal, in which the ingenious writer has briefly brought into one view, the different opinions and experiments of the chemical philosophers of the two last centuries, as well as of the later experimentists, LAVOISIER, INGENHOUX, PRIESTLY, JURINE, CRUICKSHANKS, SEGUIN, ABERNETHY, and, "as the *last* experimental philosopher, who has paid particular attention to the subject," SPALLANZANI. There is reason, therefore, to expect improvement in this part of medical philosophy.

81. I shall conclude my present observations, as connected with the general pathology of fever, with a few remarks on the doctrine of cutical days; and particularly, as I believe there are many practitioners still watchful of them. They do not so frequently occur, or are less obvious in this country, than they were among the ancients in the more southern climates. This is to be attributed to that miasma, which has been thought to produce in those climates the endemic fevers so copiously, being not so much generated here. In this country they are obscured by the prevalence of the inflammatory diathesis, as well as by the debility attendant upon the fevers of a typhoid type. It therefore should be noticed, that from the irregular varieties of fever in this country, the several *crises* are not always solutions of the disease; but they may be

said to be chiefly indicated by a gentle sweat, the going off of the delirium, moderate sleep, the crust falling from the tongue, and a moderate return of appetite. The urine also points out a change at the critical period of the disorder.

SECT. IV.

ON THE PRESENT GENERAL METHOD OF CURE IN FEVERS.

82. I shall next bring together some remarks on the leading principles of cure, and their appropriate remedies, which my reader will find of use towards the more readily entering with me into the future investigation of the Gibraltar disease. I feel it behoves me to say what has been the general practice in contagious and other fevers, that I may make the proper application of the science to the treatment I shall hereafter recommend.

83. As in the administration of remedies to relieve and cure, we have in view the particular species of the disease, they all may in some measure be looked upon as specifics. The practice of medicine rests upon one of two principles, both of which apply to the situation as well as danger of some cases: namely—we either employ such medicines as excite, favour, and support the operations of nature, (*the Autonœptetor* of the schools), or we use those calculated to obviate or remove the causes of disease, which have a tendency to induce death. On the first principle we should only rely, when we know not what else to do; and on it we may sometimes rely without doing much besides, except by regimen. But there can hardly be any one well grounded in the science, who, if he could distinguish the first, would not be equally ready to apply the second to practice. CULLEN proceeded always upon the second plan; and therefore had in view, consistent with his pathological opinions, either the taking off the excess of sti-

mulant power, or the obviating the tendency and operation of the sedative and septic powers, or principles. I shall commence my remarks on the leading remedies of fever, with brief observations on blood-letting.

84. In general, people in cold climates and seasons bear venæsection better than in hot ones: and yet I have reasons for here observing, that it may be fairly admitted in the fevers of tropical climates at the first attack, even supposing them to arise from miasma or contagion, if there should be the least ground for suspicion of the topical action of the pestilential atmosphere: But unless that be the case, bleeding is not generally admissible in fevers arising from contagion or miasma, such as the gaol or pauper fever. Further, we may hesitate less on such occasions between the age of puberty and thirty-five, than earlier or later in life, though there must be cases, according to sex and other circumstances, which may be found exceptions to this general rule (46).

85. Fevers, combined with either an original or acquired inflammatory diathesis, have been sometimes protracted to a great length, for want of one bleeding at the commencement, and will sometimes not give way until it has been once performed, or that a spontaneous hæmorrhage has taken place. CULLEN gave a caution in regard to venæscction in epidemics. He said "that it was necessary for us to observe their nature and tendency, before we made our prognosis respecting its admission, because some symptoms will indicate, whilst others would forbid, this evacuation." This remark applies strongly to what I have said above: and he has further strengthened my opinion, from the observations I have made in practice, by himself remarking, "It is not the frequency, but the fulness and strength of the pulse, which indicate bleeding; as also does the heat of the body, when considerably increased." Here I must interpose my opinion, by in turn observing, how necessary it is to discover, that the heat does not arise from nervous causes, or too much bed-covering. Dr. CULLEN also added, "that whenever there was a topical determination in

any part of the system, bleeding was necessary, whatever might be the epidemic."

86. Deliquium animi has sometimes deterred from a second bleeding. Hence therefore it may be observed, that if a bleeding has been performed upon a constricted hard pulse, and after the operation it becomes fuller and stronger, a repetition is indicated; but if it remains still weak and small, after the patient has entirely recovered from the deliquium, then we are to proceed with the utmost caution, and can hardly venture on a repetition, though other symptoms seem to urge it. Even the inflammatory crust on the first blood does not always justify a repetition of it.

87. A small quantity of blood from a large vein, by a large orifice, has much better effects than a larger quantity from a smaller orifice; and as blisters are stimulant in their effects, venæsection should not be determined on or performed, while their action continues in full force, on account of their effect on the circulation. The use of refrigerant medicines, as the acids and neutral salts, may very properly supply the place of venæsection, when we hesitate to advise it. Then nitre in proper doses is one of the most powerful febrifuges, and in irritable habits may be joined with opium.

88. The promotion of sweating at the beginning of fevers has been recommended; and many cases on record of a dangerous tendency seem to justify the practice. Is however the sweating regimen in fevers always useful and safe? It is a question of the utmost importance, and merits some cautionary remarks.- Sweating certainly does not always cure them; though MORGAN, PRINGLE, and others, have thought, that sweating at the attack of most fevers, and even of the gaol fever, has cured: and PRINGLE asserts so, even in the second stage of the latter fever. CULLEN admitted, that certain diseases may be cured by sweating alone, as the plague and sweating fever: but that it would sometimes prolong and aggravate the disease. However, sweating at the commencement

of inflammatory fevers, when not final, is always hurtful; and in such cases is best premised by venæsection, and should at all times be produced with gentle stimuli, and as little heat as possible (46.) The frequency of the pulse should not be much increased, and head-ach should not be caused, by the means used to bring about the sweating. Writers on the plague have observed, that a gentle diaphoresis is the best; but it should be properly continued; and to be efficacious should be universal. Sweating produced by a heating regimen will certainly increase or aggravate all topical affections. It must also be brought about with very great caution, when the septic power may be prevalent; which is readily the case in the plague, from the operation of atmospheric heat.

89. Blisters are the next interesting article, meriting consideration in the treatment of fevers: and their general operation renders them an object of importance in the cure of all pyrexial diseases, as well as in some others; though the theory of their operation has been considered vague and uncertain. They relieve local congestion in inflammatory affections: they are useful in nervous complaints. HUXHAM recommended them in nervous, as well as the advanced stage of putrid, fevers; and DE HAEN advised them, whenever the *vis vitæ* was weak. PRINGLE thought they had the best effects after venæsection: LIND has advised them in the gaol and contagious fevers; MONRO also still more warmly recommends them on the same occasions: but with more caution in the administration of them. In regard to the best situation for application, the nearer they are to the part topically affected the better: but in general fever they are to be applied where most convenient. CULLEN would have always preferred the head, though they are slower of action there. Next to the head, the arms and thighs were thought by him best, because on those parts their action is quicker, than on the legs.

90. I have been long in the habit of constantly recommending the Spanish fly-blister to be sprinkled with powdered camphire; unless I wished, as for instance in paralytic affections,

to have the full stimulating effects of the cantharides. For general purposes, I strongly advise the application of the camphire to the surface of the plaster; as from it I think three advantages flow: 1st, that their action in producing the serous effusion is evidently hastened: 2dly, that the painful state or degree of inflammation is in a great measure prevented: and 3dly, that the subsequent strangury is often less distressing, if not wholly guarded against. From these latter advantages, blisters may be suffered to remain longer on than formerly, which allows them to relieve more certainly any local congestion, particularly if the cuticle remains attached, as a defence to the inflamed rete mucosum. Next to blisters sinapisms may be recommended, but their vesications, or excoriations, heal much slower than those from cantharides.

91. Warm bathing is the next remedy demanding consideration, as importantly connected with our subject. This has been much used in the treatment of fevers in Turkey. In this country recourse is had more frequently to the pediluvium and semicupium. GILCHRIST has recommended the general warm bathing, from proofs of its utility sufficiently satisfactory: but he obviates the inconveniences, which CULLEN pointed out, as arising from the insensibility, and helpless state of the patients at the time, by observing, that it is a cordial, and that they therefore bear the erect posture better than could be expected, in the removal from the bath. But surely it might be so managed, that the sick person could be placed in the bath, without being raised erect. CULLEN was disposed to substitute the vapour bath as most convenient, and even thought fomentations properly managed, and continued an hour at least, had the like good effects. However, in whatever way we have recourse to warm bathing, its good effects may not immediately follow its operation; neither is it always attended with a final solution of the disease; but it mitigates the symptoms, and may put matters into such a train, as to bring it to a more speedy termination.

92. I think the pediluvium, or fomentation of the lower

extremities, might prove so importantly serviceable in epidemic and pestilential fevers, in which the sensorium seems so universally to suffer, that I shall mention what Dr. CULLEN said on this subject. "Either of them is of especial service, when there is a determination to, and irritation of, the brain; and of course should be employed, when there is either stupor or delirium; accompanied by subvultus tendinum, and a small, weak, and frequent pulse: And, when there is little or no inflammatory diathesis, the heat thus applied will do no harm, but will be attended with great benefit by removing spasm." He further added, "But when there is a phlogistic diathesis still remaining, and either creates uneasiness upon the application, they may then do harm by increasing the heat of the body, and forcing out a sweat at an improper time. This most commonly happens, when we have recourse to either of them too early in the disease."

93. On another occasion, speaking of warm bathing in general, he said, consistent with his own pathology, "that it took off the atony and spasm from the surface of the body, and removed the irritation of the brain; that it induced sleep, and a gentle moisture on the skin, and thus produced some remission of the fever." And upon the whole he observed, "that the pediluvium," to which he was partial, "was extremely useful by moderately relaxing the system: and especially by removing the irritation on the sensorium, whether arising from the sanguiferous or nervous system." The objection which Dr. CULLEN made to the application of it, when there was any degree of the diathesis phlogistica, might I think be removed, by cautiously attending to the proper temperature of the water, that the patient might experience soothing, not stimulating, effects from it: But it is most probable, that when it has been striking, venæsection will have been premised.

94. I shall next offer a few remarks on the excess of the sedative power, or principle, in the system, connected with fever. This most particularly relates to the state of the sensorium, and the origin of all motion; it must therefore be readily

conceived, that it will be difficult to remove or obviate it. When the debility of the nervous system forms the idiopathic affection, it may be capable of being removed by an increased action of the heart and arteries. The certain balance however, and connection kept up in a state of health (22) between the nervous and sanguiferous systems, renders it uncertain, and very difficult to explain, how and at what time they become mutually affected, under morbid appearances of the whole habit.

95. If we consider an increase of tone in the sanguiferous system, as an excess of stimulant power, we may justly consider the loss of that tone, as arising from debility, an excess of the sedative power. CULLEN observed "that nobody doubts that in the plague, where the debility is most remarkable, there is considerable loss of tone in the arterial system." "Upon dissection," he said, "the heart is found greatly distended beyond its usual tone, and its debility, which is evident, may be supposed to have been productive of that general loss of tone, though the latter might also arise from a putrid solution of the blood." This mode of reasoning applies very properly to that general state of the low nervous pestilential fever, which is idiopathic, and caused by the deleterious and sedative action of a miasma: But I shall have occasion hereafter to explain the apparent excess of a sedative power over the nervous system, in epidemic fevers, on another principle.

96. The removal of the sedative state of the system is to be brought about by the use of appropriate remedies: and as the excess of it is connected with, and hinges on, the general debility of the system, the means proper for the removal of the one counteracts the fatal tendency of the other, and they may be divided into four heads, namely, the application of cold; the use of tonics; the use of stimulants; and the use of anti-spasmodics. The first may be applied either externally or internally: But as cold drink is a more powerful remedy than warm ones, and capable of producing greater effects, it may,

if imprudently used, do a great deal of mischief; and therefore ought to be had recourse to with much caution. It is to be avoided, where there is the least inflammatory diathesis, or any suspicion of topical affection. As to the external use of cold water, it has ever been considered as a remedy in fevers of the putrid and petechial kind; and CULLEN had no doubt of its being a very useful and universally applicable remedy, both in the nervous and putrid fevers. DE HAEN found the washing the body all over with cold water of great service. It was recommended by CULLEN, that cold water, both externally and internally, should be used at the height, or towards the end of the febrile paroxysm or exacerbation, in order to induce sweat, and thereby a final solution of the disease.

97. I cannot pass unnoticed in this place, the sentiments of an author on aqueous practice, whose work has been stamped "as the most valuable which has ever been published;" I mean, "The Medical Reports on the Effects of Cold and Warm Water, as a remedy in Fevers and Febrile Diseases," by Dr. JAMES CURRIE, of Liverpool. This intelligent writer has very largely indeed considered the subject. I shall, however, only here notice a few of his observations, to shew to my reader the extent and importance of his reflections and experiments. Dr. CURRIE has ventured to affirm, "that, used in the first three days of fever, the cold affusion very generally stops the disease; that the same happy effects sometimes follow its use on the fourth, or even fifth day, but seldom later; that even in the subsequent stages, where the heat continues naturally great, and the skin dry, it is of great and manifest advantage, almost immediately relieving the most distressing symptoms, particularly restlessness and delirium, and conducting the disease *to a safe and speedier issue.*" In the critical analysis of the above work, in the first number of the New Edinburgh Medical Journal, is the following passage. "The medium temperature of the water in Barbadoes is 74° or 75° fahrenheit; and this appears equally efficacious as a colder application. In the fevers of the West Indies, it has been found

very grateful and advantageous. However, it did not succeed, according to Mr. M'GREGOR's account, in the fever most common in the East Indies. The failure, in some cases, stated by Dr. MACLEAN, is obviously to be imputed to its improper administration. The period and manner he adopted is quite opposite to the rules laid down by our author. At Philadelphia, the cold bath was used, and recommended in epidemic fever, by Dr. STEVENS; but it was soon abandoned. No thermometrical observations were regarded: its success could only be precarious and accidental, as it was employed in the latter stages of the disease, as a stimulant and tonic. It has lately been used with success in Virginia, according to the rules laid in the first volume of this (Dr. CURRIE's) work."

98. Reflecting on this application of cold water, as an universal practice in fevers, I cannot but think, that at the commencement, it must often with hazard be had recourse to, when the nature of the fever is not known. This appears to have been the fact in four cases of measles, but without injury, according to Dr. CURRIE's report: nevertheless, as much caution seems requisite in the use of cold water, as of venæsection, you may misapply the one as well as the other, and thereby do harm. Where the judgment of the practitioner is so ripe, that a just discrimination can be formed between the idiopathic and symptomatic fever, allowing for the difficulties of the art with every one, I believe, that on some occasions, in all climates, cold effusion or ablution may be of service. I should, however, cautiously trust to its operating with a *magic charm*. Extreme attention must be necessary, when the inflammatory diathesis prevails (96), least, its magic charm failing, a local affection might be either aggravated or occasioned. Indeed Dr. CURRIE does not recommend the use of the cold or the tepid effusion, or cold drink, in fevers accompanied by, or originating in, high local inflammation; but on the attack of fever, for the first, and perhaps second twenty-four hours, symptoms of local affection do not always

appear, and there are some local affections, which are characterized more by low nervous, than by inflammatory, symptoms; such from cold water would be easily aggravated, when we may not be aware. The magic charm here would fail, and it is clear, that the safety of the practice is not fully established, from the Editors of the Journal having observed, "that Dr. CURRIE has not stated the grounds of his objection to the practice in inflammatory cases."

99. We will pass over the catalogue of tonics and stimulants employed in the cure of fevers, and confine ourselves to a few select observations on wine, as sufficiently answering the intention of pointing out the principles, on which the practice of giving them has been founded, and on this head I cannot serve my reader better, than by giving Dr. CULLEN's few practical remarks on the use of wine in fevers, as a tonic. "Where," said the professor, "the fever arises from contagion, and there are no symptoms of inflammatory diathesis, or if the patient has been formerly habituated to it, we may indulge him with it the more early; and when the patient finds it the more and more grateful and refreshing, and delirium is diminished by it, then we may certainly administer it liberally; but when the patient has a distaste for it, is not refreshed by it, and finds himself heated and made uneasy from it, and even loathes the taking of it, then I would advise the omission of it altogether." In thus submitting to the patients feelings, Dr. CULLEN always found an advantage, and therefore recommended to his hearers these precautions. Furthermore, Dr. CULLEN observed, "that the weaker the wine, and the less impregnated with brandy, the better;" and that he had "always found the claret and rhenish much better than the Spanish and Portuguese wines, and that at the first using of any of them, "it was better to dilute them." Sack-whey, he thought, was never a proper cordial; and negus, though better, fell short of plain wine in very small quantities, or even mixed with cold water; the last he considered as the most refreshing,

and observed, "that in all cases where wine was proper, cold water might be used with safety."

100. Many respectable opinions might be referred to in confirmation of these sentiments, from wine having been generally admitted as the most safe and effectual stimulant in fevers. I shall conclude my remarks on wine, with what PRINGLE has observed, "that there is nothing comparable to it in slow fevers, unless it should excite delirium, and then it may be deemed hurtful." "It is best therefore not to have recourse to it too soon in the complaint, perhaps should not be thought of sooner than the second week;" nevertheless, I have myself found, on some such occasions, brandy diluted with water, a better stimulant than wine.

101. Antispasmodics formed the fourth division of our present observations. It is difficult to determine their proper place, and to ascertain the propriety of their use in fever. The different articles of this class of medicines are numerous, but opium is the chief of them, and I shall merely confine my remarks to its operation in febrile disorders, as applicable to our future enquiry. Most practitioners have admitted, that there is in opium a combination of sedative and stimulant powers: this occasions the necessity of much caution in its use.

102. Opium is improper in the beginning of all fevers, and more particularly hurtful in inflammatory fevers; there is, nevertheless, no bad quality in the medicine, but it has been the mal-administration of it, which has shaken its utility, and sometimes brought it into disrepute. It may, however, be sometimes useful as a stimulant, as well as the bark, in some kinds of inflammatory affections; but it is particularly so in cases of irritation without inflammation; here it is proper to remark, that in small doses it is stimulant, and in large doses sedative.

103. It is said, that in mania, without increased impetus of the circulation, it has been found highly beneficial. CULLEN had generally experienced its good effects in that kind of

delirium, which occurs in the advanced stage of fevers, and then in larger doses, as the best stimulant with a sedative power. In the earlier periods of the disorder, when the fever has been of a mixt character, the synochus for instance, I have thought it very serviceable joined with small doses of nitre. It was also an observation made by CULLEN, "that opium joined to neutral salts, would produce a sweat of the most favourable kind."

104. The dose of the opium must be proportioned to circumstances, but should not, and need not, be large in any case of fever. It may, however, be fairly said, from the variety of opinions entertained respecting the use of opium in fevers, and inflammatory affections, such as rheumatism, small-pox, &c. that there is no absolute rule in physic: but I believe most practitioners would agree with me in thinking, that it would be prudent to premise bleeding in inflammatory affections, if the case should otherwise seem to demand it, before the use of opium is admitted.

105. I shall briefly observe, as connected with my enquiry, and from being the next best antispasmodic in common use, that camphor is employed with advantage, as an undoubted sedative in fevers, from its primary action on the nervous power, but is not a stimulant, as opium. It has been thought by some a refrigerant, but it is uncertain in its effects; it is sometimes well adapted to the maniacal states of fever, and is also of service in the subsultus tendinum, and irritation of the brain without fever.

SECT. V.

ON THE EXCESS OF THE SEPTIC STATE IN FEVER.

106. It may be observed, that a proper febrile affection is constituted by the concurrence, or communion, of certain states, or powers, of the system, which have been termed by

the systematis the stimulant, the sedative, and the septic, powers; and it is by the excess of these, conjointly, or separately, that the indirect, or occasional causes of fever, produce a direct tendency to death. I therefore think it particularly necessary to make a few remarks on the excess of the septic state, or power, in the system under fever.

107. The existence of the septic state will be found either in the primæ viæ, or in the circulating mass of fluids, or in the excrementitious parts of the body, by the following symptoms. In regard to the first, such a condition of the system is generally accompanied with a sense of fulness, a loathing of animal food, nausea, and vomiting, with an imperfect state of digestion, all which however might arise from debility of the stomach, and therefore these circumstances, in a diagnostic point of view, may sometimes mislead the practitioner; but when such symptoms are accompanied with a disagreeable taste in the mouth, a fœtid breath, nidorous eructations, an insatiable thirst, and a raving appetite for all kinds of acids, they are, taken together, unquestionable indications of a putrescent state of the contents of the first passages.

108. The second condition of the system is judged of by the state of the blood when taken out of the veins, or when extravagated, and still apparently connected with the circulation. A loose putrescent character of the blood is marked, by the serum not separating from the crassamentum, or when it does, that it is not of its usual and proper colour, appearing more like a bloody water; or when the serum is of a more yellow colour than common. CULLEN however remarked, "that this last was an ambiguous appearance, for that it would sometimes happen to be so in inflammatory diseases." And he also pointed out to us, "that as the cohering property of the blood does not depend upon the serum and red globules, but on the coagulable lymph itself, the separation of the lymph, or the destruction of its coagulability, is undoubtedly a mark, according to its degree and combination with other circum-

stances, of either the inflammatory diathesis, or the state of putrefaction."

109. A judgment has also been formed of the degree of the septic condition, by the appearance of the fluids, as still connected with the circulation, or extravasated. CULLEN on this head has said, but with him I do not wholly agree, "that when blood is poured into the intestinal canal, and voided by vomiting or stool; also when it issues from the nose in drops, which are thin and fluid; and lastly, when it issues from the ears, eyes, and even the pores of the skin, in concurrence with other symptoms of putrescence, they are very strong and certain proofs, that the blood is in a dissolved state, in consequence of the excess of the septic power." On this principle, the *maculæ lividæ* and *petechiæ* have been explained, but I do not think that they ought to be considered, as always marks of a putrescent state of the system; they certainly will occur sometimes either from a state of congestion, or a weakness of the vascular solids (50 et seq.) Of the yellowness of the skin, in the commonly called yellow fever of the West Indies, as supposed to arise from a septic cause, I may have occasion hereafter to speak.

110. In regard to the third, as to the judgment to be formed of the general state, by the condition of the excrementitious secretions of the body, practitioners in general do not hesitate in deeming the septic principle to prevail, when the fœces are black, or very dark-coloured, and extremely fœtid; when the urine is of a dark, reddish, and turbid colour; when the discharge from blistered places bears a strong fœtor; when the perspiration is fœtid, and a cadaverous smell seems to arise from the whole body; but these appearances will certainly and very readily occur in tropical climates, under a plethoric or inflammatory state of the habit.

111. On the whole of this subject, Dr CULLEN observed, when drawing his conclusions from the various symptoms of general putrescence in fever, "that the appearances of it were

always attended with an increased action of the vessels, and evident marks of the action of a stimulus." And from these circumstances he considered, "that all fevers so characterized, especially towards their end, were attended with evident symptoms of the true typhus, such as were, on the whole, striking proofs of the prevalence of the septic power." If this reasoning is admitted, it proves that the change in the fluids may be brought about by the morbid stimulus of an inflammatory diathesis.

112. In the treatment of malignant epidemic fevers, nothing, generally speaking, can be more important, than the obviating or removing the excess of the septic power. A few general remarks on this head will therefore be highly proper. In order to obtain the points in view, our attention must be called to the following indications.

- I. The obviating the remote causes.
- II. The removal of putrescent matter by evacuations.
- III. The use of proper antiseptics, and
- IV. The use of tonics.

113. These various objects are effected by shunning all marsh and human effluvia, and particularly the patients own effluvia; by due ventilation, change of linen, and cleanliness of apartment; the use of quick laxative clysters contributes to our purpose, when we dare not venture on internal aperients, for fear of debilitating, and though motion prevents the putrefaction of our fluids, all preternatural degrees of it would increase the tendency to the septic state; but mild diluents, and gentle laxatives may, on some occasions, be very beneficial, and sometimes preferable, for the removing foulness of the primæ viæ. The frequent washing of the surface of the body with cold water is in some cases very proper, (96) but profuse sweats should not be excited, because they do not carry off morbific matter, if any such really existed, but tend much to debilitate the system. The end we have in view is further, and even better, answered, by the proper application of cold or cool air, as a tonic and antiputrescent remedy.

114. Further, to correct the septic tendency, vegetables are well suited: but for this purpose their place is better supplied by the fossil acids, as they not only alleviate, but correct, that morbid state of the fluids, and which is chiefly prevalent in the primæ viæ. At the same time that we, by these means, attend to the expulsion and correction of excrementitious matters, as the nidus of putrefaction, we must prevent the further generation, as well as continuance, of them, by the admission of wholesome and nutritious aliment. But when there exists a very high degree of the septic condition of the system, accompanied with great debility, we have then to rely principally on the application of cold, conjointly with the judicious use of wine and Peruvian bark. For, as CULLEN observed of the bark, "its action as a febrifuge depends upon something more, than its antiseptic quality." I do not know of any article of the *materia medica*, in its nature truly harmless, that requires more caution in the administration of, than the Peruvian bark demands in fevers, as well as in some other affections, both in regard to the quantity to be used, as well as to the occasions for using it; and the more so, because it is a remedy in such general use.

SECT. VI.

ON INFLAMMATION, AND ITS TERMINATIONS.

115. Inflammation being so much connected with most of the epidemic fevers, as appears from the histories in general we have had of them, I shall next proceed to some observations on the subject of Dr. CULLEN's phlegmasiæ, and of the inflammatory diathesis: And as this diathesis so much prevails in general in febrile disorders, some brief remarks on the difference between the febres and phlegmasiæ of CULLEN's nosology, are necessary to the object of my ultimate enquiry, and to the readily comprehending my intended illustration.

116. The PHLEGMASIÆ, or fevers with local inflammatory affections, agree in many respects with true idiopathic fever. Their *grand* difference lies in this circumstance, namely, that the former are always attended with the inflammatory diathesis, and some *decided* topical affection; whereas, the latter is considered only as arising from a general inflammatory temperament. But I believe an apparently inflammatory fever has often occurred, and been cured as such, without the topical affection having been suspected.

117. The predisposing or exciting causes of the phlegmasiæ are, the plethoric habit, and tense, firm, and rigid fibres. From among the occasional causes may be mentioned, as the principal ones, cold; direct stimuli, which act upon the vis nervosa; and the injudicious use of tonics, too frequently the consequence of domestic practice. The immediate symptoms are, an increased impetus and action of the vessels; an increased tone of the system, and strength of fibre; but more especially a hardness of the pulse. The cure is principally effected by the immediate power of venæsection, as capable of inducing local, as well as general, relaxation.

118. On this general outline Dr. CULLEN founded his opinion, saying, "that both from the causes, symptoms, and cure of inflammation, we are authorized to conclude, that it is dependent on the state of the vis insita, or inherent tone of the system." On this ground therefore it would appear, that the pyrexia of inflammation, or of local inflammatory affections, depends on the vis insita, and the pyrexia of true idiopathic fever, on the vis nervosa. It may further be observed, that inflammation terminates either by resolution, or suppuration; and that the true phlegmasiæ are never contagious, but when they are symptomatic. This leads me to consider a little the ordinary specific terminations of inflammation.

119. The various species of inflammations are generally divided into cutaneous, visceral, and articular. They were all supposed by CULLEN to have been at their commencement

membranous, and afterwards to become parenchymatous. When inflammation does not terminate by resolution, but leads on by its continuance to suppuration, *pus* becomes the product of it. In regard to its formation, writers have differed much: but I believe it to be now pretty generally admitted, that the serum of the blood of a healthy person, kept in a proper warmth for some time, will be converted into *pus*: or what ordinarily appears in the form of *purulent* matter. Thus heat and stagnation seem unquestionably to have co-operated in its production.

120. This occurrence, or product, has often given rise to difference of opinion, and much embarrassment, in forming a certain and just diagnosis of pulmonary complaints. For pus has been known to have been spit up from the thorax, for a long time together, when on dissection no marks of erosion or rupture were found in the lungs. The recovery of such cases has therefore given occasion for thinking, that the true *phtysis pulmonalis* has been cured, when in fact no ulceration on the lungs had taken place (11). In like manner, an effusion of serum on the brain may, under peculiar circumstances of constitution, lead to the formation of pus. It may also be remarked, that when laudable inflammation is absent in wounds and ulcers, suppuration does not take place.

121. Another termination of inflammation, is by gangrene, or sphacelus. Gangrene may arise from atony of vessels, without any preceding effusion into the surrounding cellular membrane. There is no difference between gangrene and sphacelus, but in degree. Inflammation may also terminate by such an effusion of red globules, as to destroy the tone or texture of the part, before suppuration or putrefaction can take place; and when such happens to a vital organ, it becomes speedily fatal. In this way we may account for the sudden suffocation in the case of peripneumonic inflammation: and I believe such a termination may have often happened, when not suspected, in maniacal, phrenitic, and *some other* local affections.

122. PHLEGMON and ERYSIPelas are sometimes connected with internal inflammatory affections, as will hereafter be noticed; but they generally form different species of cutaneous inflammation. Yet they may in some cases be joined. The erysipelas, which forms the eruption in consequence of fever, is very properly considered as an erysipelas phlegmonodes; for the *acrid matter* is commonly communicated to the deeper seated vessels, and occasions suppuration, in conjunction with erysipelas. The furunculus therefore, on the other hand, may be called phlegmon-erysipelatodes, because a particular matter is lodged in the cellular membrane, in conjunction with the suppuration. These remarks on this particular kind of cutaneous inflammation become necessary, from its being so often connected with the internal inflammation, of which I shall have occasion hereafter to speak.

123. I shall next set down, as referable to my future enquiry, a few practical remarks on the general treatment of the inflammatory diathesis, when locally affecting the various parts and organs of the human body. In cases of decided topical inflammations, topical bleedings are preferable to general bleeding: and of these, cupping and scarifications have been thought more convenient and less fatiguing than leeches. In that most serious of all internal inflammations, the inflamed condition of the meninges of the brain, aperients are of much use, though they should not supersede the employment of venæsection, which may be pushed as far as to produce revulsion.

124. EMETICS have been recommended in some inflammatory affections; but they are not necessary, and may do harm in some symptomatic fevers: And here it is applicable to our future investigation to observe, that Dr. CULLEN could not have had any proper or fixt idea of the plague, different from the common acceptance of it, from the advice he gave respecting the use of emetics in the disease, for he said, "that so great was the analogy between the plague and other fevers, that emetics were admissible even unto full vomiting at the

first, and afterwards in nauseating doses." But as the Doctor objected to the use of emetics in cases, where there was any reason to suppose, that any considerable effusion of blood to the internal parts existed, I shall hereafter endeavour to point out reasons, why they are especially inadmissible at the commencement of the plague, and epidemic fevers in general, from the symptoms so generally observed at the attack (35, 38). Neither does the new opinion of Dr. RUSH, that the plague and yellow fever are of the same nature and origin, alter in the least the tendency of my enquiry.

SECT. VII.

ON THE VIRULENCE OF EPIDEMIC FEVERS.

125. I think it pertinent to my subject, to add a few observations on the virulence of epidemics, as connected with human effluvia. It was observed by Dr. CULLEN, "that though effluvia from the human body in a sound state are very innocent and mild, it was generally admitted, that, when accumulated and retained, they became extremely unwholesome, and at last acquired the properties of a most virulent poison."—And that it was also known, "that by communication with other bodies, their virulence became increased." He therefore remarked, "that most epidemics are propagated by a fomes, which nourishes itself, so as to become highly virulent, and that such diseases, at the first breaking out of a pestilence, attack with the greatest violence, becoming milder as they grow more general and epidemic, and are at the last propagated only from the human body." This is a matter meriting the most serious consideration.

126. On these grounds, however, Dr. CULLEN concluded, "that the effluvia, which arises from contagion, are milder in their effects, than those generated by a fomes." And as a proof of the greater violence of diseases when introduced by a fomes,

he took notice of the infectious fever at the Old Bailey some years ago, where the fomes was introduced by the clothes of the prisoners at the bar. He observed, "that out of forty persons who were so infected, not three recovered." Whereas he had not learnt, "that any person afterwards caught it of those, who had been infected in court, though there had been every reason to believe, that they all had been properly attended by physicians, nurses, &c. on that occasion."

127. On this principle he accounted for the mildness of the small-pox from inoculation, conceiving it to be owing to the infection being communicated from the human body, and not introduced by an atmospheric fomes, as in the natural way. There is something surely too specific in the character of the small-pox, and even of the proper contagious diseases in general, to admit of this explanation to its full extent, I believe however, that it will hold good in the case of the *endemic pauper fever*, so frequently met with in this metropolis, and other large cities. Here I may again take notice of the opinions of the learned professor of medicine, in the University of Pennsylvania, Dr. BENJAMIN RUSH. They will be found interestingly connected with our subject, and are related in the following passage, selected from the Critical Analysis in the third number of the New Edinburgh Medical Journal. The professor's paper on the yellow fever, as given originally in the sixth volume of the American Medical Repository, has been thus noticed. Dr. RUSH observes, say the Editors, "that when fevers are communicated from one person to another, it is either by means of secreted, or of excreted matters. In the former way the small-pox and the measles are communicated, in the latter, the gaol, ship, or hospital fever" (77). The perspiration, by acquiring a morbid and irritating quality, in consequence of its stagnation and confinement to the body in a tedious gaol fever, is the principal means of its propagation; it is confined to sailors and passengers in foul and crowded ships, to prisoners and patients in foul and crowded gaols and hospitals, and to poor people, who live in small and

damp confined houses ; it prevails chiefly in cool and cold weather, is never epidemic, and is not communicated more than a few feet from the sick, unless by means of clothes worn by them. It has been but little known in the United States since the revolutionary war, but has now and then appeared in ships crowded with passengers, from different parts of Europe ; it is a common disease in the manufacturing towns in Great Britain, and has frequently been confounded with the West Indian and American yellow fever, which differs from it in prevailing chiefly in warm climates and seasons ; in being the offspring of dead and putrid vegetable and animal matters ; (74) in affecting chiefly young and robust habits ; in being generally accompanied with a diseased state of the stomach, and an obstruction or preternatural secretion and excretion of bile ; (35, 39) in terminating most commonly within seven days ; in becoming epidemic *only* by means of an impure atmosphere ; and in not furnishing ordinarily those excretions, which when received into other bodies, re-produce the same disease." This diagnostic account of fevers thus communicated by excrementitious matters from the human body, and contrasted with others supposed to derive their origin from putrid exhalations of the atmosphere, from the sources before mentioned (75), may be well founded, but it does not reach to the extent of the enquiry I have in view, to account for the raging of any epidemic, or pestilential distemper in a hot climate, such as was the late Gibraltar disease, or of any other, which may not be strictly contagious.

SECT. VIII.

ON THE CONNECTION BETWEEN THE BRAIN AND CIRCULATION IN CERTAIN FEBRILE AFFECTIONS.

128. A wish to comprehend in the present undertaking, all those parts of the general science of medicine, which I have

found necessary to, and connected with, the investigation held in view, has induced me to lay before my reader in the following sections, some appropriate remarks on the physiology and pathology of the brain. This design, I flatter myself, will assist the younger members of the profession, in more readily traversing the ground of enquiry with me, as it pertains so immediately to general systematic principles. I shall therefore first observe, that, as defended by the cranium or bony covering of it, the brain is the seat of the sensorium, and the origin of the nervous power, and so intimately interwoven with our very existence in all the functions of life, that there can be no principle in natural philosophy and mechanics, but must refer to some one part or other of the animal economy, and its operations. It appears very evident, that until the middle of the last century, there had been but little progress made in the knowledge of the hydraulic and organic systems, *with which certainly the principle of fever must be connected*, both when the sensorium and nervous energy of the brain, as well as the circulation, are affected.

129. The cranium, agreeable to the opinion of Dr. WALKER, in a late number of the Medical and Physical Journal, is not wholly intended as a defense to the brain from external injuries, but as a boundary, a guard of security, a circumvallation, to prevent any exuberance in the action of the circulation from impairing, impeding, or deranging, either partially or universally, the immediate and established organization of the cerebrum, cerebellum, and medulla oblongata, in any one part of them, they being all liable to be very essentially acted upon by inordinate impulses of blood, from morbid actions or exertions of the heart and circulating system. If we add to this rational physiology, the novel and deeply investigated doctrine of Dr. GALL of Vienna, as made known in the same number of the Journal, viz. that the brain and nervous system emanate as it were from the medulla oblongata and spinal marrow, and that the sensorial functions of the cerebral organ depend, in a particular manner, upon the superficial structure, or organ-

ization, at the cortical circumference of it, as connected with the meninges immediately covering it, and lining in a manner the internal surface of the cranium, marked, as he has pointed out, by depressions internally, and by *elevations and prominences on the outer part of the scull*, thus dividing the whole into thirty-two distinct *organiculi*; can we, after this, wonder at the frequency and universality of nervous febrile affections, and mental derangements, arising either from local injuries partially, or atmospheric changes generally affecting, the sensorium and nervous power, and also the whole of the functions of the system dependent on them? This new opinion, however, embraces ideas almost beyond our comprehension.

130. The immediate relation between the sensitive and nutritive systems of the human machine, is mechanically as well as vitally supported; is not this evident by the increased impetus of the heart and circulation proving the means of restoring the lost or impaired energy of the nervous system? (68, 94). Again, by sedatives proving stimulant to the circulating system, by having first debilitated the nervous system; the effects also of cold on the human body, both as a sedative and a stimulant, prove the same. Thus the brain may be stimulated by cold in a secondary manner, through the medium of the circulation, which so sensibly varies by its operation (66).

131. The general condition of the body, and the performance of its various functions, as well in health as under disease, depends upon the nervous power; the muscular and moving fibres derive their power as certainly from the state and condition of the brain and nervous system, as the circulation does its continuance from the due action of the heart and arteries (23 et seq.).

132. The primordial structure, and component parts of the brain, were more importantly connected with the original organization of the whole system, than the structure of any other organ, from its particular and necessary communion with the heart; and on this, and the distribution of a just and proper *quantum* of blood to the solids, does perfect health

depend (22). While such a perfect communion continues, the human frame may escape every disorder, save what it is heir to from specific contagions (29), during a very long course of life. Professor CULLEN used to say, that he could point out by illustration, "that the health of the animal body depended more on the proper distribution of the blood to its various component parts, than on any other circumstances."

133. The physiological opinions advanced by Dr. KELLIE of Leith, in his original communication of a case of torpor from cold, in the third number of the Edinburgh Medical Journal, open a new field for pathological enquiry into the obtruse nature of cerebral and febrile diseases, and should therefore here be noticed. His new ideas, respecting the vitality of the brain, have been conveyed to his reader in the following language. He has conceived, that in the case of torpor, the state of collapse, or insensibility, "is in consequence of the connection of the brain with, and its dependence upon, some other of the functions antecedently and more immediately affected; and this function he apprehends to be respiration." He has supposed, "that a very intimate connection is maintained between the organs of respiration, and the origin of the energies of the nervous system, through the changes produced on the blood during the pulmonary circulation;" "and has considered this dependence of the brain upon the properties of the blood, maintained by respiration, as evinced by a great variety of observations." He in an especial manner defends his opinion by the experiments of BICHAT, who, he says, "has, in a masterly manner, traeed the mutual connection and dependencies of the vital functions, in his admirable "*Recherches Physiologiques, sur la Vie, et sur la Mort.*" This new opinion brings still more home to our reflection the important connection of the brain and circulation, while it places the latter as dependent in some degree upon the passive action of the lungs, from the immediate communion thus supposed to exist between respiration and the sensorium.

134. As the causes of febrile disorders have so frequent an operation on the sensorium and nervous power, I think it proper to mark down some further circumstances, establishing the primordial connection between the physiology of the brain, and circulation. The vessels of an animal body are always full. When the just balance in the necessary distribution of the blood is disturbed, there must be produced in some one part of the body a considerable tension, and this lays the foundation for what has been called a morbid plethora (22 et seq.). By our creation we proceed from a small to a considerable bulk. In the first periods of life, the resistance of the extremitieis is greater than that of the larger vessels, from the laxity of the solids. As the body increases in strength and age, the solids become more dense, and of course the resistance of the vessels to the pressure of the circulating fluids also increases; and it is then that the plethoric state will appear. This is first distinctly observed about the age of puberty, from the peculiar changes then to take place.

135. The brain must in every sense be considered as the principal organ of the system, for the conducting of which we find, that the extra-determination of circulating fluids is first made there. Thus, the head is the first finished member or organ of the animal body, and from the beginning receives more blood than other parts: and hence its vessels are the fullest. But as it arrives soonest at its *acme*, so the resistance to the fluids is soonest made there: And this explains why haemorrhage happens most frequently from the nose, at and about that period of life: after this the balance has a tendency to change, and the plethoric state is liable to be produced elsewhere.

136. When the age of puberty is fully passed, and the growth of the whole system is in a great measure completed, then the plethoric state will be more especially felt in the lungs. These organs will then most readily suffer from congestion, because they regulate the balance of the whole body, and circulate as much blood as goes the round of the whole

system ; at the same time that their vessels are smaller, and weaker. Hence haemoptoe, or spitting of blood, will more generally take place at this period, than either at an earlier or later time of life.

137. In the first stages of life, the arteries are more lax and distensible than the veins ; so that the effects of the full growth of the body, relative to haemoptoe, may continue fifteen or twenty years ; and during this period pthysis pulmonalis more generally prevails, from the above cause. But in the after periods of life, the arteries become stronger, and less dilatable, from their constant action ; and thus the balance falls upon the venous system about the age of thirty, or thirty-five years. At and after this period, without external causes occasioning them, haemorrhages may arise from venous congestion : and they generally first occur, where the circulation is slowest. I believe this may be said first to happen in the system of the venæ portarum ; and hence arises at this age the haemorrhoidal flux.

138. After the middle age of life, the motion of the blood is also very liable to interruption in the nervous system of the brain : for it there wants the assistance of muscular motion to propel it on ; and as these vessels soonest arrive at their perfect aëmè, so it is most probable, that they soonest acquire a morbid rigidity. Further, as the circulation through the brain is entirely supported by the action of the heart and arteries, I think it must clearly appear, why venous congestions and haemorrhages of the ENCEPHALON happen so often at, and after, this period of life, giving rise to apoplexies, palsies, &c. and therefore, from the opinion I entertain of the nature of epidemic diseases in general, I believe there may be some just foundation for the observation made by the Editors of the American Medical Repository, "that the diseases of palsy and apoplexy had been the precursors of pestilence, that is, of the yellow fever, at New York ;" and, "that even such cases had assumed appearances, which more generally belong to malignant

fevers:" at the same time it may be fair to agree with Professor STRINGHAM, that such cerebral affections "had not prevailed with an *unusual* and *alarming* frequeney," (Edin. Med. Journal, No. 2) as stated in the Repository. It is much to be wished, that the age of the patients attacked with the above cerebral disorders, had been mentioned, in order to judge, whether it was arterial or venous congestion. When such affections arise from various congestions, the drawing blood by the jugular veins will have much greater effect, than bleeding in the foot, on HOFFMAN's ancient doctrine of derivation and revulsion: renewing as it were, by the jugular venæsection, the benefit of a juvenile hæmorrhage from the nose (135).

139. The preceding physiologeal cireumstances, respecting the brain and circulation, will be found hereafter much connected with my enquiry, and they formed the ground work of Dr. CULLEN's cure of hæmorrhagy in general.

140. It will moreover be material to my purpose, to introduce the worthy Professor's observations on the EPISTAXIS, or hæmorrhage from the nose. "I consider," said he, "this hæmorrhage as a relief to various disorders, and often a preventative of some, especially those connected with a plethoric state of the brain; for, according to the STAHLIANS, an hæmorrhage from the plexus of arteries, lying so superficially on the membrane lining the cavities of the nose, seems to serve as an evaevation to relieve the brain, as they are not only supplied from the external carotids, but also from the internal vessels."

141. The evacuation is sometimes arterious, and sometimes venous; and hence the critical terminations of fevers, and some other disorders, by an hæmorrhage from the nose, can be explained; and so nicely is the balance of the circulation kept up in some hæmorrhagie constitutions, that vertigo, head-ach, congestions of the lungs, and even hæmorrhage from the nose itself, have been known to ensue from a sudden stoppage of an hæmorrhoidal flux. The cure therefore of

piles ought very critically to be considered on some occasions (137), on the doctrine of the *vis medicatrix*.

142. I have heard it observed, that an epidemic fever, attended with delirium, has often terminated by an haemorrhage from the nose. This circumstance has puzzled those writers, who had supposed, "that fever was connected with the doctrine of coction and crisis, and a morbid matter." I do not wonder at their difficulty of explanation, and it serves to me as a proof, that local affections of the brain existed formerly, which were relieved by this local profluviā then, as they are at the present day, so as often to lay the foundation of recovery, by the fortuitous removal of a congestion.

143. Diseases of the sensorium may arise either from concussion, or compression, of the brain; the latter from either fractures, or inward tumours, of the cranium, or from over distension of the vessels immediately connected with the medullary substance. An over distension of vessels produces only a temporary, or transitory, kind of apoplexy. Rupture of, or effusion from, them, causes a continued one; and I think it is not conjecturing too far, to suppose, that the brain may be liable to such a morbid derangement, or compression, from the former cause, as to give rise to a febrile apoplexy, or apoplectic fever: of which nature it is probable, that some of the ordinary brain fevers are. While therefore a distension of the larger vessels and sinusses cannot alone compress the origin of the nerves, or nervous influence, a general compression of the medullary substance may arise from distension of the extremities of the smaller arteries and veins, and thus produce more general effects.

144. Effusion of fluids upon the brain, or within the cranium, is generally of more serious consequences, than over distension, and may be either of the sanguineous or serous kind. External violence, causing concussion, or contusion, may occasion an effusion of red globules; or the same may arise, according to cases on record, from a sudden increased impetus of the arterial blood by violent anger, or exercise, or the

impulse caused by maniacal and phrenitic exertions ; any resistance also to the return of the venous blood to the heart, as violent straining, may produce the same. This, by distending the vessels, and causing an accumulation, in consequence of the temporary regurgitation, may occasion a rupture of vessels, or such an over distension, as may never be removed. How far sudden terror may produce similar effects, will be more fully considered in another place (68, et seq.).

146. It appears therefore, that a serous effusion may be the consequence of an over distension of, or resistance to, the circulation in the larger vessels, which effusion, in an ordinary way, is no more than an exhalation from the smallest vessels ; and as lymphatic vessels and glands have hitherto been but imperfectly discovered in the brain, the only way that a due and regular absorption takes place, must be by the inhalant veins, when not morbidly affected by an undue regurgitation, or resistance, through congestion, or inflammation. In short, whatever obstructs the return of blood, from the brain to the heart, must occasion a temporary compression on the brain, and on some occasions leave a congestion, or effusion, which is not afterwards removed.

146. I cannot, however, help observing, that, from the peculiarity in the vascular organization of the brain, and its membranes, it is probable, that the encephalon is much exposed to diseased states, and I believe is more frequently so affected, than is generally imagined. Is there not much reason to apprehend, that the fatality of fevers in general arises too often, from the disturbed state of the circulation through the brain not being early enough suspected, and too much laid to the account of a supposed idiopathic excitability in the sensorium and nervous power, from contagion, when it ought rather to have been considered as symptomatic ? As illustrative of these conjectures, I will here put down the peculiarity in the vascular structure of the brain, as being essentially connected with most of its organic diseases.

147. The blood is sent from the heart to the head in the

usual manner, viz. by the carotid arteries and their ramifications, but its return is not the same as in any of the other parts of the animal machine, for it is propelled back by the medium of sinusses, into which the small veins empty themselves, and for the most part in a direct contrary course to that of the motion of the blood in the said sinusses. It is further worthy of observation, that the venous blood in the sinusses is thus deprived of the assistance of a continued muscular action, to propel it onwards in the manner it is in all other parts of the sanguiferous system.

148. Hence some sensorial and cerebral disorders may probably originate, in a preternatural distension of the sinusses only; and from this cause, an accumulation of blood in the vessels of the brain is very apt to take place, especially after the middle age, or towards the decline of life, when the action of the heart and arteries, on which the circulation in the brain materially depends, becomes diminished (138). Earlier in life, affections of the brain may depend more on the hæmorrhagic efforts of the arterial system (135).

149. From these considerations, there can be nothing more obvious, than that the venous system of the brain is particularly liable to an accumulation of fluids, and to a plethoric state; and more especially when concurrent causes operate, to obstruct the free course of blood from the head. I therefore apprehend, that a temporary congestion of the head, whether arterial or venous, may under certain states of the atmosphere, and certain irritations of the nervous system, lay the foundation for local inflammatory affection, when little suspected to be threatened or endangered. Yet it is very difficult to determine, when it is arterial, and when venous: but it is admitted to be most frequently the former.

150. Sometimes tumours within the cranium have been found on dissection, and have accounted for the great disorder of the system during life, most commonly of the chronic kind, but sometimes attended with a considerable degree of febrile derangement, not from having acted by a general compression

of the brain, so as generally to have affected the origin of the whole nervous power, but by a local action causing a local congestion, and thereby a general impression, or irritation, on the whole of the muscular or moving powers.

151. Dr. BAILLIE has observed in his "Morbid Anatomy," that the membranes of the brain, as well as the substance of it, are variously liable to inflammation; but that the latter is not very common, when no injury has been applied to the head. He has, however, observed one thing in point, "that a partial separation of the *tunica arachnoides* from the *pia mater*, by a gelatinous fluid, is not an uncommon appearance of disease, particularly after fevers, in which the brain had been a good deal affected." Were these epidemic fevers, or only the supposed contagious typhoid fevers of our own clime? It has certainly not been the practice with professional men to examine the *bodies* of those, who have died of typhoid, or contagious brain fevers.

152. Disordered states of the brain are generally characterized by peculiar affections of the eye, but many of them are symptomatic of constitutional diseased states. The injury done to the *retina*, by inflammation, causes the *intolerantia lucis*, affecting thereby the tendinous expansion of the organ of vision. It was just now observed (151), that the phrenetic febrile delirium, or inflammation of parts within the cranium, is most frequently an affection of the membranes of the brain, and but seldom of the cortical or medullary parts of it. The symptoms were observed also by Dr. CULLEN to be, diagnostically, very dubious in this disease, and he only pointed out, as characteristic of the phrenetic affection, "the *delirium, ferox, and suffusio oculi*." He had also added the *typhomania* of SAUVAGES, because it took in all the symptoms of maniacal delirium, which are met with in the PHRENITIS; but that is evidently a different organic affection, because, as he observed, "typhomania is best cured by opium."

153. As sometimes connected with slight phrenetic affections I shall speak of the *erysipelas*, an exanthematous dis-

ease (122). This class, the *exanthemata*, consists of diseases, which are mostly epidemic, but the erysipelas is generally sporadic, (57) and of a relative character to the phlegmasiæ. It begins commonly at the ear, and creeps along the face and hairy scalp, and will be sometimes accompanied with a tendency to delirium. This has been supposed occasioned by an effusion of morbid serum running along the vessels; but Dr. CULLEN doubted, that such a morbid translation to the membranes of the brain took place. I believe it more consonant with fact, and the prevailing opinions of this day, to suppose, that the internal affection of the brain arises from simple communication of inflammation, by the ordinary circulation of vessels. Being so often immediately concerned in occasioning some of the morbid states of the brain, I shall next introduce, as direct causes of death, whatever may produce either a compression, or a destruction of the texture, of the medullary substance of the brain.

154. Compression certainly in many cases proves the direct cause of death, and may be considered as fairly destroying the excitement; though it has been more frequently thought an indirect cause, and been conceived to act only by destroying the functions of those nerves, that supply the vital organs, and not immediately life itself. It was on this ground, that CULLEN entertained the opinion, that *coma* in fevers was no proof of a compression of the brain, but rather of a state of collapse in the nervous energy. "Had it" said the Professor, "been the effects of compression, it would have always proved fatal; but as this was evidently far from being the consequence of coma, I therefore look upon it as a temporary collapse." - He seems hereby to have admitted no medium state, or degree of inflammation of the brain, as causing compression, without being necessarily fatal.

155. In regard to the destruction of the texture of the medullary substance of the brain, as relative to febrile affections, I think it is to be questioned as a direct cause. That various

topical affections of the brain take place in fevers is undoubtedly: but a destruction of texture more frequently arises from blows, and other accidents, occasioning injury to the brain itself. These indeed, by their irritation, may produce convulsions, which may destroy the patient: under such circumstances they are certainly indirect causes. Dr. CULLEN therefore considered the only direct causes of death in fever to be, either increased excitement, or poison: but the latter may surely be considered, as often an indirect cause.

156. The indirect causes of death more immediately act upon, or affect, the circulating system, and the various functions of the animal economy connected with the heart; and when they produce fever, with or without a conjoint operation on the brain, are all referable to one or other of the three following heads, according to their several modes of action, namely, to the excess of the stimulant, the excess of the sedative, or the excess of the septic power.

157. The pulse becomes particularly characteristic of the nature of the fever, when connected with morbid affections of the brain. The strong pulse is consequential to sensorial, or cerebral, irritation, and inflammation, and is always to be considered as a mark of the inflammatory diathesis. The slow pulse is not always a proof of the absence of irritation from local cause; for in some persons the pulse will be found slow, when they are in a comatose state; but then it is to be supposed, that there is some compression on the brain, which prevents cardiac irritation (78). Thus the frequency of the pulse, which so much characterizes most other pyrexial diseases, is not, however, so striking in symptomatic fever accompanying topical affections of the brain (79).

158. The inflammatory diathesis, when attended with a determination of blood to particular parts of the system, namely, either to the head, chest, or abdomen, may become in its consequences very dangerous; but this determination is never more so, than when it is made to the head, from the

operation of occasional causes often so much favouring it. Of this topical affection I shall therefore speak more particularly.

159. The particular determination of blood to the head, is most common to all fevers, and is most apt to be considerable; the cause of this it is difficult to assign, but it was enough for Dr. CULLEN's purpose, that the fact was generally admitted, and he thought proper to distinguish it by the following symptoms. It is to be apprehended, said he,

I. When a peculiar throbbing, and pulsation, occur in the carotid arteries, near the spheroid bone.

II. When more or less of a considerable redness appears in the face, with some degree of turgescence. This however may accompany the beginning of all sweats.

III. When the redness extends to the eyes, from the vessels of the *tunica adnata* readily filling, and becoming universally distended on such occasions, which can be anatomically accounted for, from their connection with the above carotid arteries (146 et seq.).

IV. When, though not always, yet in many cases, an increased sensibility to light and noise takes place, more especially when accompanied with the foregoing symptoms (152).

V. When head-ach occurs with the other symptoms, for it then may justly be deemed a mark of the determination; but it is to be considered a doubtful symptom, because it has sometimes been attendant on the cold fit of fever.

VI. When constant watching, and disturbed sleep occur; and these are to be reckoned the most dangerous and strongest symptoms of an increased and alarming determination to the head.

160. Such have been described by Teachers generally, as the ordinary marks of a determination of the blood to the head in fevers; but they have been most strongly noticed, as characterizing the phrenctic delirium, which is always attended, when violent, with constant watching, and furor in the tone of mind, inflammation of the face and eyes, restlessness, and a

constant inclination to get out of bed; and a confusion of ideas. All these symptoms, when more or less combined, indicate a real inflammation in the head; and though the patient has in many cases recovered, yet, for the most part, such symptoms of determination to the head prove fatal.

161. Dr. CULLEN observed, "that the phrenitis, when purely topical, was very certainly mortal." And he also further observed, "that death is almost certainly foretold in fever, when, in concurrence with the symptoms of general debility, either topical inflammation of the brain, or the highest degree of putrefaction, is present (106). He particularly noticed one very important observation of the late Sir JOHN PRINGLE, "that upon every dissection of such, as died of the gaol fever, he found abscesses in the brain," which, said Dr. CULLEN, "was a certain proof that it had been topically affected." It redounds very creditably to the memory of Sir JOHN PRINGLE, that he pursued the investigation of the disease so far, as to examine the head after death: but still the disorder was considered an idiopathic fever.

162. Consistent with the extent of my views, which will hereafter more fully appear, I shall here introduce an enumeration of those symptoms, which, together with the symptoms of general debility, were considered by Dr. CULLEN in the typhus, as certain presages of death, and indications of topical affection of the brain. They were;—to wit, topical irritation of the brain—great sensibility of light and sound;—increased action of the heart and arteries;—suffusion and redness of the eyes, with flushings of the face; and sometimes topical affections of the lungs and abdomen;—coma-vigil, inquietude, and restlessness. Danger is equally portended, if, upon a low delirium, any of the phrenetic symptoms supervene, together with a small contracted pulse;—irregular spasmodic, convulsive, tremors;—subsultus tendinum;—spasmodic motions of the eyes;—&c. I should myself consider any pulse, of the nature of the above described, if exceeding 120 beats in a minute, as a mark of debility with irritation; and certainly

appertaining to the proper typhus fever more than to the phrenitis. Limpid urine has been mentioned by some writers, as a sure sign of an approaching febrile delirium.

163. Several important remarks may be made on these various symptoms, as pertaining to the object of my future enquiry, which is, generally speaking, to establish a more clear and decided pathology, if possible, of the ordinary epidemic, and apparently contagious, disorders of the Continent, and tropical climates, in the hope of either lessening their frequency, or of establishing a more successful method of cure. If I should succeed in provoking a further enquiry in the minds of those, who, as able and experienced physiologists and pathologists, may be more qualified to establish the views I have had than myself, I shall feel gratified by the humble attempt I here submit to my professional brethren. But the perfect elucidation of this important subject must rest, ultimately, not only on the reflections of those intelligent practitioners, who have already witnessed the scenes of pestilence, but of those also, whose fortune it may be in future, to be engaged in the treatment of the malignant pestilential disorders of tropical climes.

SECT. IX.

ON THE IMPAIRED ENERGY OF THE SENSORIUM AND NERVOUS POWER IN FEVERS.

164. From the same motive (128) I shall next proceed with some important observations connected with sensorial pathology. Dr. GALL, of Vienna, in the paper before alluded to, (Med. and Phys. Journal, No. 80,) has observed, that "the anatomists and physiologists almost of every age endeavoured to investigate the *direct* seat of the soul, and to find out the very spot *wherein* the different faculties of the mind are resident." But the Doctor, on the contrary, "has considered

the brain, not as the common organ of the soul, but as *an assembly or an aggregation of the different organs.*" If future anatomical investigation should establish this doctrine generally, it may lead to a more pointed and successful treatment of the various local affections of the brain, as distinctly referable to one or more of his thirty-two **ORGANICULI ENCEPHALI**. For our present purpose, it will be sufficient to speak of the brain in more general language, as the aggregate organ of the mind and senses.

165. The affections of the sensorium and nervous power are characterized by intellectual changes ; by pain and muscular irritations ; and by inordinate actions ; varying according to the degree and extent of any particular local injury or defect. Delirium and convulsion are the striking features of sensorial derangements. The particular symptoms referable to the intellectual functions, as excited or altered by fever, appertain more particularly to the doctrines of physiology : or rather, as under morbid changes, are then referable to the science of pathology. They depend directly upon the nervous power alone, which varies, giving rise to the denominations of excitement and collapse.

166. Consistency and coherence in thinking depend upon a certain equality in the excitement of the nervous power, which constitutes the true and natural sensorium ; and delirium, or a deviation from the above, is owing to some alteration, or inequality in it.

167. Delirium is of two kinds, or degrees ; the *delirium mite*, or low, and the *forte*, or violent *delirium*. Coma and the delirium mite in fevers are ordinarily considered, as depending on collapse : they certainly arise also from compression. But the delirium forte, or high phrenetic affection of the sensorium, depends upon increased excitement.

168. Delirium and coma may be produced in fevers, independent of the general state of the circulatory organs, or a morbid action of the heart, and on such occasions must arise from topical affections of the brain itself, or its membranes.

169. Delirium, in a greater or lesser degree, is an ordinary attendant on fever, and follows the general affection of the system. That it is frequently connected with the state of the circulation, appears to be proved, by its generally happening in the hot fit, or during an exacerbation, attended with head-ach, throbbing pulse, &c. (32, 45). It may therefore be fairly suspected, that febrile delirium is owing to an increased impetus of blood, or altered state of circulation in the vessels of the brain itself. This was Dr. BOERHAAVE's opinion; but CULLEN went farther, and attributed delirium to a change in the nervous power, or substance of the brain itself, on which he supposed this alteration in the intellectual functions depended.

170. Febrile delirium differs in its character, as well as in degree. Teachers of medicine have said, that when it happens during the hot fit, or exacerbation of fever, it has been supposed to arise from excitement; and that when it occurs in the cold fit, it is then considered as occasioned by a collapse arising from debility; and is said then to resemble approaching sleep. I should, however, suppose, that temporary compression from congestion might, in some degree, contribute to produce it during the cold fit (165).

171. CULLEN and BOERHAAVE differed in their theories respecting sleep and watching. The former thought them dependent on the varied energy of the brain, while BOERHAAVE imagined them to arise from certain diurnal changes in the circulation of the brain: they both may be concerned with Dr. KELLIE's opinion, "that respiration has a connection with the vitality of the brain." (133). The alterations in them, caused by fever, have been considered as effected by that debility or collapse, which induces delirium; and on this ground CULLEN founded the above opinion, and felt very confident, that the leading causes of disease always depend upon their mode of action on the state of the nervous power.

172. In as far, therefore, as that violent excitement may become the cause of diminished excitement and general debi-

lity, I think it probable, that it might be the sole leading cause of fever; and in this way we might account for those intermittents and low nervous fevers, which in the metropolis cannot be traced to any source either of the marsh, or human, effluvia, or of any direct contagion. The leading remote causes of such fevers have already been generally spoken of, (57 et seq.). I shall confine myself in this place to a very important one, particularly at the times of prevailing pestilence, from its immediate relation to the nervous power. I speak of FEAR, an intellectual action or impulse of great effect on the system at large: but before I enter upon the promised remarks, on its operation generally, I shall point out some corporeal actions and alterations, with which the low nervous fever is especially attended, though not always accompanied with delirium.

173. In general the expressions of the face, and the motions of the eyes, are the index of the soul, and consequently of the energy of the brain. Their healthful state or action however, becomes affected by fever, and then, by the muscles of the face being without motion or expression, the eyelids half raised, and the eye itself regardless of objects, the whole countenance marks the general debility of the system. These are the proper symptoms of impaired voluntary motion, from the diminished nervous energy of the whole system.

174. When the debility is very great, general tremors take place, and some are observed in the countenance by the motions of the lips, tongue, and lower jaw; in the increasing state of it, spasms and convulsions will occur. These, however, CULLEN admitted, as sometimes arising from debility, and sometimes from irritation, and observed, "that though in fever they are evidently owing to debility, yet that they certainly may arise from irritation, in consequence of a certain degree of topical affection of the brain;" they are also frequently connected with some change in the state of the mind, which is often so *apparently* affected through febrile debility. I shall therefore relate, as briefly as possible, the several affections of the animal economy, which indicate debility of the sensorium,

as generally noticed by teachers of medicine, and as strikingly characteristic of some *pestilential* diseases.

175. The common tone of the mind is first affected by a state of dejection and despair; this symptom of debility is observed to happen to the strong and athletic man, as much as to the weak and delicate woman, so as to render him equally timid: it is not always to be attributed to some moral cause of anxiety. In the next place the intellectual faculties become affected, through *apparent febrile debility*. The affection of them is marked by difficulty of recollection, want of a proper association of ideas, and a greatly impaired memory. It will be at the first expressed by dreaming: the dreams are generally of the melancholic and frightful kind; they interrupt sleep, and are attended with a certain confusion of thought. As the latter increases, an actual incoherence takes place at the time the sick person is about to fall asleep, and when he awakes is not able, for a considerable time, to recollect himself. Moreover, when a patient is thus affected, while he is quite awake, he may be said to be in a state of actual delirium. This species of delirium has none of those symptoms, which attend on the commonly called true phrenitis; on the contrary, the patient is mild and calm, and will sometimes have ideas of the cheerful kind; but the phrenetic delirium is accompanied with more of furor, anxiety, restlessness, &c.

176. Another state of the sensorium to be noticed is the *coma-vigil*, or constant watching. This has been reported a symptom of either increased impetus of the blood in the brain itself, or of an incipient state of inflammation, probably of the membranes only. The alteration, or disturbance, of sleep may, on most occasions, be consequential to various other topical affections, which cause local irritation, and CULLEN owned, that at the first the brain might be thus slightly affected, and yet a phrenitis ultimately ensue. But *coma-simplex*, or constant sleep or drowsiness, is a symptom of remarkable collapse, and debility of the system; though CULLEN conceived,

that it might be owing to a combination of irritation, and debility, arising from some alteration in the action of the excitement, or collapse, in consequence of the commencement of some topical affection of the brain; yet he generally considered the coma-simplex, as depending chiefly on debility.

177. There is a species of coma attended with still less irritation, wherein the memory is entirely impaired. This is the proper lethargic state. The degree of oblivion, or loss of memory, is so great, that the patient knows not where he is, nor his most intimate friends and relations. In short, he becomes insensible of all external and internal impressions, and in this state voids his urine and faeces involuntarily. These consequences are truly to be attributed to his insensibility, and not, as too often has been fatally supposed, to general debility, or a paralytic affection of the sphincters.

178. It may be further observed, that from the same general cause, namely, the impaired state of the nervous energy through the system, the heat of the skin becomes very great, the tongue dry, and yet the patient has no thirst, nor is he able to distinguish the particular fluids offered him, and at the same time the sight and hearing are impaired. These were, in Dr. CULLEN's opinion, certain symptoms of a weakened nervous energy. To the same sensorial state has been attributed the patients seeing double, or imaginary objects before him, such as spots or prominences, which he is constantly catching at, and endeavouring to remove.

179. The effects of a general nervous debility, as connected with the state of the sensorium, are also characteristically pointed out by certain changes in the circulation, in the respiration, and the alimentary canal: but of these I need not so particularly speak at present, yet shall observe, that the stomach, the organ of the body of the most exquisite sensation, shews always a very considerable sympathetic connection with the morbid states of the sensorium (34). It is also influenced by other local affections. STAHL and CULLEN agreed in opinion, that the gout did not depend upon a morbid matter,

but originated in a derangement of the nervous power; the latter therefore observed, that the sensorium seemed to be as it were *distended*, or in some way topically affected, on the approach of the gout, by a remarkable dejection of spirits, by an aversion to study, and a kind of confusion in the head. Of such a *sensation* in the head, (not however connected with gouty diathesis,) I have been myself sensible, when I have been for several hours together reflecting, and writing on the subject of this work; on quitting it, the distended sensation in the head has in a short time left me.

180. There are causes, which may be said to affect the nervous power by mechanical action, independent of compression from congestion, or effusion. Thus the case of ordinary sleep happens without any compression, as is proved by people falling asleep, when you take off the action of external stimuli. But a morbid degree of sleep may arise from causes, which in some manner act upon the sensorium, in the same way as they produce the apoplectic state. In this way, by altering or diminishing the natural state of excitement, do extreme cold, the steams of strong fermenting liquors, electricity, various causes of sensorial concussion, violent passions both of the active and sedative kind, occasionally operate, through their effects on the brain. It is now time to enter upon the intellectual operation of fear, as a remote cause of fever, especially when epidemic (172).

181. The sensitive power of the system has appeared on some occasions to have been so wonderfully acted upon by disease, that the principle has given rise to the introduction of charms in the cure of intermittents, and some spasmodic affections, as the hooping-cough, epilepsy, hysteria, &c. On the same ground antidotes to the plague, without any specific power granted to them, have been approved of, as fortifying the mind against its epidemic power. Surely therefore, if the mind can be so influenced on these several occasions, how great must be the operation of fear on the human frame, in raging pestilential seasons (69).

182. FEAR, or fright, has been known, from its sudden action, to have so deranged the balance and connection between the sensorium, and circulating system, as to produce an irregular or premature return of what had been the regular paroxysm of an intermittent; and so intimately connected are the nervous and circulating systems, that I believe it fair to attribute the varieties of intermittents, both as to their duration and species, to the varieties in the nervous temperaments of different subjects (22 et seq.). CULLEN was of opinion, from the communion of the nervous and vascular systems, that the major part of head-achs might be deemed topical fevers (45).

183. Terror and sudden fright have also much influence both in producing, as well as aggravating, continued fevers. From their acknowledged debilitating power they are said to have probably occasioned, in some epidemic seasons, cases of the typhus, and low nervous fever; but for the most part they are assisted by the morbid operation of cold, and other concurrent remote causes. From their instantaneous and sudden effects, or action, on the heart as well as on the sensorium, it is rational to suppose, that they produce such an immediate change in the circulation of the encephalon, through the brains sympathetic connection with the heart, as to lay the foundation of *local mischief* in the first instance, *and to add it*, when the general febrile derangement of the system has already taken place, from the other febrile causes generally prevailing.

184. Fear, however, may operate in different ways on the system. Thus, it may, by increasing the impetus of the blood, cause menorrhagia or abortion; on the other hand it may occasion a suppression of the menses, by producing constriction. A difference in the nervous temperament must be the cause of this its variable mode of action on different women.

185. The powerful effects of fear, or rather terror, as occasioning nervous and spasmodic affections, merit particular notice in tropical practice, being immediately connected with the state and condition of men, at the period of any raging epi-

mic. It may be considered as that passion, or impression on the mind, which arises from the view of an immediate and great evil suddenly presented to us. Every case of uncertainty is, in some measure, a cause of fever, as appears from the expressions children will make in the dark; and as every new and unusual object, is an object of uncertainty, it is productive of these effects on the mind, especially if the object be very large in bulk, or of intense force, or disagreeable in quality, and above all, if of acknowledged fatality in its consequences, especially if the knowledge of it is suddenly presented to our view, or mind (68 et seq.).

186. Fear, therefore, according to its nature and degree, operates very differently on our system, but generally as a sedative passion. As such, in its highest degree, it has produced palsy, apoplexy, syncope, asphyxia, and even death. In a certain degree, however, it is said to have acted as a tonic, in the cure even of some epilepsies; I should rather think as an antispasmodic also: but as we do not always know the proper method of exciting it, nor the measure of it, which possesses this quality, we therefore can seldom have recourse to it, as a probable means of cure. These facts prove the important connection of life and health, with the immediate actions, or exertions, of the brain itself (22). But as the force or application of terror varies, so its principal effects are not in all cases, or constitutions, precisely the same.

187. There is no doubt, but that fear does sometimes operate principally on the sanguiferous system, that is, on the heart itself, and from thence arises the sense, or feeling of palpitation; it may also affect the arteries, and thus produce stagnation, and congestion in different parts of the body. In this way a turgescence in the vessels of the brain may cause palsy, apoplexy, and epilepsy. Dr. CULLEN took notice of a particular case of epilepsy, produced by fright, the fits of which were always preceded by head-ach, pain over one eye, with an inflammation on the tunica adnata, which indicated some congestion of the head. It may therefore, from these

premises, be fairly concluded, that though fear generally acts by collapse, yet that it may sometimes produce irregular motions in the sanguiferous system generally, and thus occasion some partial and sudden congestion of the head, and that a morbid mobility, from turgescence of the system, must surely have some connection with febrile delirium (135, et seq.).

188. From the generally known fatality of the continental and insular fevers of the western hemisphere, all visitors from this country, as well as from every other, must arrive with dread in those quarters of the world, from its having been so universally observed, that as new comers, they are particularly liable to the endemic diseases of those climes. I shall therefore here introduce the particular observations made by Dr. MOZELY, as pertinent to my subject, on his concluding the account he has given of the climate of the West Indies: for the yellow fever will appear *hereafter* to have been, most frequently, of a relative nature to the Gibraltar disease.

"I cannot," says this experienced author, "dismiss the present subject, in which my views have been principally directed to the avoidable and remediable derangements of the body, without one solitary glance at those derangements of the mind, which no regimen can prevent, no medicine cure."

"Hot climates administer certain death to a *mind diseased*, and where there is in the *memory a rooted sorrow, or written troubles of the brain*. The want of sleep in the slightest indisposition is always alarming, and in the graver diseases, of people who have naturally much irritability of habit, or some grief, or anxiety of mind, it is the cause of so great a determination of blood to the head, with excessive action of the arteries of the brain, and so much perturbation of the animal spirits, that often admit of no relief or composure, but what the unhappy sufferer, after the most violent convulsive struggles, phrenzy, and inflammation of the brain, finds in death."

"Sometimes he escapes this fate, to experience the miserable alternative, of a long imbecility of the faculties of the mind."

"Therefore," says the Doctor, "let not the discontented in

mind, nor the broken hearted, hope to evade his cares and troubles, by changing to these climes ; nor think that any passion which has stormed the breast, will abate its force by distance.—**NOSTALGIA**,—that longing after home, exerts its painful influence in the remotest regions, and magnifies to danger the most trivial indisposition of either mind or body, when both are already half subdued by the heat and dread of climate. Those, whose happy days have not yet been clouded by misfortunes, let them be careful *here*, to observe tranquillity of mind, and watch with caution over their passions. The young and inexperienced, who have embarked with the false notion, that fortune has heaped up treasures for them, to be delivered out *gratis*, let them also prepare for disappointment : and let them avoid, at first arriving in these countries, entering into any serious engagement, or intricate concern, until they have made themselves acquainted with the genius of the people, and their local laws, for fear any glittering allurement should lead them into an inextricable labyrinth of difficulty and vexation, and consign them “*to that country, from whose bourne no traveller returns.*”

SECT. X.

ON CERTAIN MORBID CONDITIONS OF THE BRAIN, IN
SOME ACUTE AND CHRONIC AFFECTIONS.

189. I shall conclude THE FIRST PART of my undertaking with some further observations generally connected with the preceding sections, and my ultimate enquiry ; and with the intentions I before declared (128). We may justly attribute to the influence of the SENSORIUM, and particularly to that NERVOUS POWER, of which I have just said so much, the exertions and effects of that wonderful principle in the human frame, which certainly exists, though some have denied it, denominated in the schools the “*VIS MEDICATRIX NATURÆ.*” or as ex-

pressed by other words, “*the certamen inter naturam et morbum*” (83). The doctrine of morbific matter has certainly been very scientifically exploded of late years (179), and a more rational principle has been established, namely, that the nervous power has the greater share in the production of fever; and that the event must be determined on, by observing those motions, which may prove the means either of restoring health, or inducing death; but the difficulties, which have ever stood in the way of satisfactorily explaining the causes of life and death, will always embarrass us in our endeavours to establish a sure and certain prognosis (23 et seq.).

190. I think, however, that the weight and influence of a *vis medicatrix naturæ*, in the animal system, is mostly evident, and brought to bear under disease, when the sensorium, or seat of the nervous power, is only secondarily, or symptomatically concerned. This healing principle may very readily be admitted in local affections of the system of the inflammatory character, the seat of the sensorium itself alone excepted: or in low nervous fevers arising from personal uncleanliness, or other human or epidemic effluvia. But in fevers connected with local affections of the brain itself, I believe that principle, the *vis medicatrix naturæ*, loses a great portion, if not the whole of its salutary or healing power and actions, and may even, by the exertions it may make, increase the danger attending on all degrees of sensorial inflammation.

191. The debilitating power of fever, particularly if accompanied with cerebral inflammation, is so great, that it will immediately reduce the strongest man to the weak condition of a child, and sometimes almost to the state of approaching death. This must have its foundation in the disturbance of the nervous principle of life (71). When such sudden effects take place during a truly malignant epidemic, it may be owing to the strong power of the sedative miasma on the brain; and in this way we may account for the sudden deaths during a plague, from pestilential vapours having the power and effects, as teachers of medicine have supposed, of poisons on the human senso-

rium (174). Dr. CULLEN observed, "that whatever might be the true nature of the animal poisons, so frequently deleterious to human existence, they clearly appeared to act quicker or slower, according to the quantity, or quality, at last produced in the system by a supposed fermentative process, when their sedative power is not at first so great, as to kill suddenly." If, however, I should ultimately prove right in the opinion I have taken up, respecting pestilential fevers, the doctrine of fermentation may be fairly laid aside.

192. Of all the diseases to which the brain is liable, the *phrenitis vera idiopathica* is the most important, as well as the most rapidly fatal; difficult also of detection in its lesser degrees, and I think not so rare as may be generally imagined. From the frequency of mental derangement during fever, I think this local disorder merits the most serious consideration. CULLEN went so far as to declare, that he had only once, if he had ever, met *with it* in the course of forty years practice. He observed, "that it could only be said to happen, when the redness of the face and suffusion of the eyes, together with the delirium ferox, were coeval with the attack of the disease." He also thought, "that all writers confounded the symptomatic with the idiopathic phrenitis." In this latter opinion I think he was mistaken, on pathological grounds.

193. It is, in my opinion, of the first consequence in febrile practice, early to discover, even to suspect, the existence of such a local affection: for whether coeval or not with the attack of fever, that is, the *pyrexia*, it must at any period very considerably add to the danger the patient must be in. The successful treatment of sensorial inflammation must very much depend upon its being known, to be either the idiopathic, or the symptomatic, I shall, in this place, only briefly notice what most particularly appertains to the cure of the true idiopathic phrenitis.

194. Venæsection is the principal remedy, immediately that it is suspected, and that too very freely. Topical bleed-

ings are to be preferred, as the opening the jugular veins, or the temporal arteries : but this last is often attended with trouble and inconvenience, and may be superceded by scarifying and cupping the temples (87). When caution in brain fevers is necessary respecting venæsection, purgatives are well adapted to take off the inflammatory diathesis, and lessen local inflammation ; but they are particularly so in the case of topical inflammation of any part of the brain, by the revulsion they are supposed to cause (123). Blisters are of the greatest service. It was the practice of the ancients to apply them to the most remote parts; but at this day we know that the nearer the seat of inflammation the better (89). The whole of the antiphlogistic regimen ought to be attended to.

195. Of internal remedies I shall only take notice of two, nitre and camphor, the union of which, as a general medicine, would be found serviceable in most phrenitic affections. Camphor has been sometimes used in external inflammation ; but not alone in internal ones. When nitre is added to it, it may be found of much advantage in some cases of cerebral inflammation. But, as Dr. CULLEN observed, "when the sensorial affection was more of the maniacal than phrenitic character, camphor alone, in a full dose, had the happiest effects in procuring rest (105)."

196. There are some similar affections, which certainly do not depend singly upon an accumulation, or inflammatory obstruction of blood about the head ; because phrenitic delirium often accompanies other affections, particularly the *peripneumonia*, or inflammatory condition of the body or substance of the lungs, attended with a suffusion of the cheeks, from difficult transmission of blood through the lungs. The inflammation of the diaphragm, denominated the *paraphrenitis*, has been so called, from its having been commonly supposed attended with delirium ; but it is not always so: while, on the other hand, in some other affections of the thorax, it will sometimes take place. See Morgagni de Sedibus, &c.

197. When we consider the minute and complicated structure of the brain and its appendages, can we be surprized, that the human frame should be subject to such a variety of diseases, which arise from causes often latent, disturbing and deranging the sensorium and nervous system, without any evident local disease connected with the hydraulic part of our machine, the circulation, and apparently unaccompanied with fever? Such diseases would seem to depend upon a weakness in the functions themselves, however connected with the nervous system; or from irregularities in those functions flowing from some organic derangement. The brain and nervous power being the fundamental parts of the animal economy, from its primordial existence, (132) there is even much cause to wonder, that we are not more exposed to sensorial disorders than we are: but that we are, oftener than suspected, is my firm opinion: for, the proper origin of the nervous power is seated in the tender medullary part of the brain itself, as well as of the cerebellum and medulla oblongata; organs of the most tender, and complex strueture (129).

198. Again: there are a variety of diseased affeetions connected with the nervous system, but operating chiefly on the muscular system, by inordinate actions. These must depend on a certain action in the brain itself, which action is determined by a certain measure in force, velocity, &c. and for the most part the several actions of the system, and that of the brain itself exciting them, are separately exerted. Spasms, epilepsy, convulsions, and diseases of that character, are to be attributed to a derangement of the sensorium, as depending on the irregular exertion of the brain itself (164 et seq). The causes of violent excitement, when instantaneously acting on it, will induce such diseases; for example, the foree of anger, &c. I shall accordingly put down a few observations on diseases particularly eonnected with a morbid state of the sensorium, leaving my reader to make the application of them to such parts of the preceding general pathology, and the

intended investigation, as in his judgment are most appropriate to them.

199. APOPLEXY may be divided into two distinct species, the hæmorrhagic, and the hydropic, or in other words, the sanguineous, and the scrous. The first species is most successfully treated by bleeding freely from the jugular; but it requires, as before alluded to, much *acumen* to distinguish, when it arises from arterial, and when from venous, congestion (148); in either case the bleeding might do good. Blisters to the temples were strongly recommended by Dr. CULLEN; but he thought them hurtful in the hydropic apoplexy. Why he thought so I could never comprehend; he in this species preferred purgatives of the acrid kind, from the great evacuation they produce: why should not therefore blisters in the hydropic case, even to the whole head, relieve locally, as well as arteriotomy in the hæmorrhagic apoplexy? When it is a clear case of hydropic apoplexy, I think, they must do good, particularly when arising from the state of collapse; the cases of true apoplexy from collapse, are caused by either poison, electricity, or cold.

200. In regard to PALSY, I find occasion to make but a few remarks, it being known to originate from most of the causes of apoplexy, and is often immediately connected with it. Its affinity therefore to it seems well established. The loss of sense accompanying palsy depends perhaps more on the loss, or impaired state, of circulation in the part affected, than in the loss of nervous energy. As connected, however, with our hydraulic system, the circulation, the subject remains very obscure, from its variability in degree of fulness, impetus, and determination. The intellectual faculties are generally unaffected in palsy, but sometimes are, particularly when arising from tumors within the encephalon, occasioning partial compression, and sometimes an imbecility of mind is owing to a state of collapse subsequent to apoplexy. DIEMEN BROEK mentions the case of a girl, who through a violent fit of fear was seized with hemiplegia, affecting the lower extremity on

one side: it continued thirty years, and was suddenly removed by a flash of lightning.

201. A morbid state of the brain is also one of the most frequent causes of EPILEPSY. This state is generally a turgescence of its vessels, which has appeared manifest on the dissection of persons, who have died of epilepsy, and who had laboured under the various symptoms of præternatural congestion in the brain; it may be difficult to determine whether this was the cause, or the effect. Many symptoms, however, of inflammation, and increased impetus, have also been found on such examinations; and also the marks of purulency, which never takes place without previous inflammation, and increased impetus (161). Dr. CULLEN also observed, that the phrenitis, which is most certainly the consequence of inflammation, has very often been known to attend on epilepsy: epilepsy may therefore be considered as bearing some affinity to apoplexy, in as far as it is very frequently the consequence of increased impetus, and in this manner we may account for intoxication, anger, and violent exercise, inducing epilepsy.

202. Chronic affections of the sensorium have been characterized, as not attended with fever or coma. They chiefly regard the state of the intellectual faculties, and are not very easily defined (165). The distinction between sense and madness, can best be learned by an application to common sense (166), and will admit of division according to the manner of their affecting us, sleeping or waking (171).

203. FATUITY is supposed to arise from flaccidity of the brain in infants, and from rigidity in old age. However, it is so difficult to reduce the subject to a just and clear pathology, that this mental state has generally not been looked upon as an object of practice. A firmness in the medullary substance of the brain has been observed by myself, on the examination of those, who had been subject occasionally to fits of the epileptic kind.

204. MANIA and MELANCHOLIA are the mental diseases, which become more the object of practical investigation, and arise from the inequality of the excitement, or healthful action of the

sensorium itself (169). Maniacal persons powerfully resist all sedative impressions on them, from the force or power of the cerebral excitement; but the febrile delirium admits more clearly of relief, from its being known to arise either from the increased impetus of the blood, or the unequal excitement of the brain, from local plethora or obstruction.

205. Various are the direct causes of those states, which give rise to the above mental derangements, as tumours, &c. within the encephalon (150); but the ordinary remote causes are sudden and violent passions, as fear, joy, &c. All long and durable passions; as grief, disappointments, intense applications, especially to one subject: these are the mental causes; but such affections of the sensorium occasionally take place through the body, sometimes from poisons, sometimes from fevers, suppressed evacuations, repelled eruptions, &c. A caution is here important: from the analogy between mania and phrenitis, beware of the use of opium, with the least tendency to local congestion, or the plethoric state (102 et seq.).

206. Those who would wish to know more on this subject, I beg leave to refer to the writers on maniacal affections, and mental derangements. We have had within these few years, a very scientific and instructive work on such sensorial disorders by ALEXANDER CRICHTON, M. D. at present Physician to the Emperor, and the court of Russia.

POSTSCRIPT.

On a recapitulation of the subjects of the several preceding sections, I think I need say little more now, than what will tend to impress my reader with the importance and propriety of premising them, as the ground-work of the intended investigation.—I first called his attention to the advantages of a dogmatic plan of education, because such an illustration could not be either satisfactorily attempted, or readily understood, without it.—I next offered a few observations on our primordial existence, and on the principle of life, that it might be the

more easily comprehended, on what foundation our health might be deranged, or death occasioned, through accident or disease.—After those brief remarks, I next judged it expedient, that the leading causes, symptoms, and varieties of fever should be, in a general way, noticed, that the ground of my deviating from the opinions hitherto entertained, might be hereafter the more readily admitted, or rejected.—It then naturally followed, that I should briefly speak of contagion, cold, and fear, as the universally admitted, causes of a spreading febrile pestilence.—These points would of course lead me on to make a few remarks on the state of the atmosphere, on the variability of the pulse, and on the changes in animal heat, as connected with, and affected by, the febrile remote causes.—In the next place I found it necessary, in order that the intended deviation from the hitherto admitted principles of practice, which I shall have in proper time to submit to my reader, might be the better understood, that I should, in a compressed manner, lay before him, the present general method of cure in fevers, even of the pestilential kind;—and as the latter have been so much characterized by a particular tendency to the septic state of the system, I should have thought myself remiss, if I had not pointed out some of the leading circumstances marking an excess of it.—As this excess in pestilential seasons has appeared to the author to arise much from the prevalence of the inflammatory diathesis, aggravated by the state of the atmosphere, he was next led to introduce a few remarks on inflammation, and its terminations, as appearing so often connected with epidemic, and even with some truly contagious, diseases.—This necessarily called upon him to put down a few select observations on the virulence of epidemic fevers, whether arising from human, or atmospheric, effluvia.—When so far advanced in the subject, as forming the ground-work of the intended investigation, I was led, from observations in my own practice, and the impressions made by my readings on pestilential fevers in general, to think, that the virulence attending on them was in an especial manner accompanied by **SENSORIAL AFFEC-**

TIONS, in so much so as to establish, in a great measure, the danger, according to the degree of THEIR existence, particularly when noticed on the attack of the fever. I therefore thought I should well serve the general cause, as to the object of this the first part of my undertaking, and also aid my reader in entering with me into the much wished for investigation, if I laid before him some remarks on the established connection existing between the brain and circulation, under fever:—on also the impaired energy of the sensorium and nervous power, when disturbed by febrile actions of the system;—and also point out what have been suspected to be the morbid conditions of the brain itself, in sonic acute and chronic affections.

By reflecting well on the preceding general principles, as more or less connected with febrile pathology, I think the mind of the experienced practitioner will be gradually inclined to question the validity of former opinions, and be in the end disposed to coincide with the author in his belief, that **MALIGNANT PESTILENTIAL TYPHOID DISORDERS**, particularly of the tropical climates, are in truth to be more considered as **SYMPTOMATIC, than IDIOPATHIC, FEVERS.**

END OF THE FIRST PART.

No 600

3

OBSERVATIONS

ON THE

CLIMATE,

MANNERS AND AMUSEMENTS

OF

MALTA;

PRINCIPALLY INTENDED FOR THE INFORMATION

OF

INVALIDS

REPAIRING TO THAT ISLAND

FOR

THE RECOVERY OF HEALTH.

BY
WILLIAM DOMEIER, M. D.
OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON,
&c. &c. &c.

LONDON:

PRINTED FOR J. CALLOW, MEDICAL BOOKSELLER,
CROWN COURT, PRINCES STREET, SOHO.

1810.

THE
MORAL VILLAGE
OR
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4, Brydges Street, Covent Garden. }

AN
ACCOUNT OF MALTA.

CHAP. I.

OF THE CLIMATE AND VOYAGE.

§ 1.

SINCE the whole continent of Europe has been occupied by the enemy, patients are frequently embarrassed, whither to resort to, if a more southern climate is necessary for the recovery of their health ; and physicians not less so, whither to send them, for a milder climate. I am therefore induced to think, I shall render a service to both, in briefly offering to their

notice some observations made during a residence of three years, concerning the climate, medical assistance, diet, pleasures and comforts of life, of that island. I shall divide the chapters into distinct paragraphs, and devote each of them to a particular subject.

§ 2.

I must be permitted to remark, first, that in all cases of indisposition, where advantage may be expected from equality of climate, dry soil and atmosphere, little rain, a constant bright sky, greater equality of nights and days, both in respect to warmth and length, than in England, hardly any gales of wind, few thunder storms, little or no dew, hardly any fogs; as also from the conveniency of taking exercise by land and water in carriages, on horse, mule, or ass, upon good roads; and in boats, from sea baths, agreeable society, theatre, balls at proper hours, public libraries, newspapers, musick,

card tables, good provisions, genuine wines, excellent beer, excellent fresh and preserved fruits, dry houses, and many other comforts of life, that such patients may, with safety and advantage, be sent to that island.

§ 3.

The expectations of patients from the advantages of a climate, which is reckoned conducive to health, extend frequently too far; for I myself, and every body, must be aware, that people, who arrive at Malta in the last stage of consumption, must die as well there, as in Portugal, or in the south of France; however they will suffer less, and prolong their life more, than they would do in other parts of Europe; and the prolongation of life, only for one day, is sometimes desirable.

§ 4.

As our ideas about a good climate vary like most other things, I propose to describe every quality of it in particular, and to let the readers judge, whether they think the climate, I am going to pourtray, might suit them.

Persons accustomed to take strong exercise, are not pleased with the same degree of warmth, as weakly persons, who sit the whole day in their rooms.

§ 5.

I begin with the *thermometer*, which is, throughout the whole year, very regular, and not subject to sudden changes. The greatest difference in the atmosphere between night and day, as far as I was able to observe, was hardly more than 6° Fahr. and the lowest

stand in the winter, I saw, was 51° , and the highest in the summer 88° , if I except two days in the beginning of August 1805, when it stood at 93° .

In July, August, and in the beginning of September, the thermometer stands commonly from 83° to 88° , and falls after the middle of the last month to 80° . In the beginning of October it stands high, above 70, and falls at its end to 70° . In the beginning of November it stands high up in the 60, and falls at its end towards 60° . In the beginning of December, it stands from 62 to 58° , and falls at its end to 55° . In January, and in the beginning of February, it stands from 55 to 51, and rises at the end of the last month towards 60° . In March to 65° , in April to 68° , or a little more; in May a little above 70, in the beginning of June to 76° *, and at its end to 79 or 80° .

* The Maltese say, that the summer heat begins at St. John's day (June 25.)

This range continues, with very little interruption, from one year to another, much to the advantage of delicate constitutions.

§ 6.

Neither Lisbon nor Naples, the two most southern places of Europe, can boast so equal and regular a temperature; for I have seen ice in the first town, and snow and ice in the latter; besides the difference between the temperature of day and night is much greater, for it amounts often to 20°. This equality must be a great advantage for the recovery and the prevention of those numerous diseases, which are brought on, and maintained, by suppression of the cutaneous perspiration, *viz.* chronic dysentery, diarrhœa, rheumatism, gout, coughs, catarrhs, ophthalmia, colic, dropsy, cutaneous eruptions, &c.

§ 7.

On account of the small difference of temperature between day and night, to which Englishmen are not accustomed, they commonly think the heat much greater than it really is: because, for a few hours, during a few days, in some summers, the thermometer rises also to 88°; but the great difference is, that elsewhere it falls in the night often more than 25 degrees, and in Malta only about 6, which makes the nights in summer rather warm.

§ 8.

Changes from dry weather to rain must happen in this island, as well, as in all other habitable countries, though they happen more seldom than in other parts of Europe, because, during three to four months in the summer, it does

not rain at all, and rarely ever in the winter. Rain, which lasts a whole day, is a rare occurrence; it commonly falls in the night, and is followed the next day by clear weather. I am not able to ascertain the quantity of rain during a year, because it is not measured: by guessing, I should think it amounted to about 15 inches*. Showers of hail fall once or twice in the winter, but snow never.

§ 9.

Dews are very inconsiderable, because the atmosphere, except when the sirocco blows, is dry, and has consequently not humidity enough dissolved, to fall down condensed as dew. Besides the difference of the warmth of the air, between night and day, is so imperceptible, that

* Rain is also of great use, in respect to cleanliness; Vallette being built on a declivity and bordered on three sides by the sea, is perfectly washed by a shower, and the mud flows into the ocean.

the condensing cause is not strong enough to produce dews.

§ 10.

The *sirocco* (south-east wind) prevails in September, and renders the air dense and damp. Persons with flat, narrow chests, or those, who have diseases in their lungs, such as scirrhi, vomicæ, ulcers, water in the breast, &c. feel uneasy on days when this wind blows, because the atmosphere is damp, and has a smaller proportion of oxygene, than it ought to have. I myself, and many of my acquaintance, suffered little or nothing, or nothing more, than by a feel of lassitude. Upon the whole, I suspect that the complaints against it, are greater than the real evil. At all events, it cannot be looked upon as a cause of diseases, for the longest time, I recollect it to have blown, was three days successively. Should some readers

be of a contrary opinion, I ask them, what great difference can a little less oxygene in the atmosphere produce on the human constitution, in such a short time, whereas the atmospheric air at all times contains more of this matter than we want for respiration?

§ 11.

Fogs are very rare, because the atmosphere is always too dry to create them; or, when they sometimes appear in the winter, they are neither thick, nor do they last longer than a few hours in the morning, because the powerful sun disperses them soon.

§ 12.

Thunder storms happen rarely, and in summer never; the last circumstance is remarked also, throughout the whole southern

part of Italy. the want of mountains and forests is most likely a cause of their rarity during the whole year ; for there is no object to attract electricity.

§ 13.

Gales of wind do not blow in summer, and rarely in winter, spring or autumn. The first part of May is commonly a little windy. Light sea breezes cool the air in summer, and still more in autumn; in a pleasant and wholesome manner. No wind, even from the north, which is not frequent, is cold.

§ 14.

The soil is *dry*, for the whole country consists of a calcarious rock, where two feet of earth is reckoned an ordinary depth ; when, in some instances, even it is found deeper, it is

not sufficiently so to harbour damp. Besides, there being in the island neither rivers, lakes, ponds, morasses, stagnant water, nor forests ; and, upon the sea, hardly any water plant, consequently there is no cause of rendering the soil moist.

§ 15.

This is also the reason, that the *atmosphere* is nearly always *dry* and *clear*. The sky is hardly ever covered with clouds, and the inhabitants have constantly the felicity of beholding a brilliant sun, a splendid moon, and glittering stars, and this in a more perfect manner, I think, than is the case in any European country, Italy not excepted ; an equality of climate, of which we see too much of the reverse in England.

§ 16.

Malta, lying in 35° of northern latitude, consequently 16° nearer to the line, than London, and being an island, even a small island*, where the climate is always milder, than on the continent under the same latitude, *explains* partly, *why the winters are so mild*, and milder than from the latitude alone could be expected, especially, as there are neither mountains, nor forests, nor marshes, nor any other cause, productive of cold. Also the equality of temperature, as well throughout the whole year, as in respect to day and night, in great measure can be explained, from this same circumstance. The days are, likewise, from the more southern situation, longer in winter, and shorter in summer, than in England.

* It is 20 miles long, 12 broad, and 120 in circumference.

No *endemic disease* has ever been observed, neither like the yellow fever of the West Indies and North America, nor as the plague in Turkey, nor the malignant intermittent fever in Italy, nor the ophthalmia and elephantiasis in Egypt, &c. the only epidemic which fell under my observation, during three years residence, was that of the small-pox, at the time when I left the island, which however was much checked by a general inoculation of the vaccine.

§ 17.

After having related, what I had to say, of the qualities of the climate, and acquainted the reader what he has to expect from it, I finish this chapter with stating, that the *most favourable time to leave England* is the *middle of August*, so as to arrive before the beginning of the equinoctial gales, still during a warm, and pleasant season. The invalid has then, besides the said advantage, the pleasure of

making the voyage during good and warm weather, which is so conducive to health in general, but especially to consumptive, dropsical, and rheumatical patients, who compose a great number of those, whom physicians usually advise to seek the recovery of their health in a milder climate than their native one.

§ 18.

The speediest and most convenient way to make the voyage, is *to embark in the packet* at Falmouth, from whence it sets sail every three weeks, and arrives commonly after a month's voyage, or a little more; because she brings also the mails to Cadiz, Gibraltar, and Girgenti. The expence of the voyage is sixty-four guineas, every thing included, except a present of a few guineas to the steward.

§ 19.

The length of the voyage, nearly two thousand miles, is for the cure of many diseases, *viz.* consumption, spitting of blood, chronic dysentery, diarrhœa, mania, piles, &c. of no small advantage. I recollect myself, several times, to have seen, with pleasure, patients ill of these, or similar complaints, disembark much better, than they were at their embarkation, some even recovered, not only at Malta, but at Lisbon, and other southern sea places.

CHAP. II.

OF MEDICAL ASSISTANCE AND DIET.

§ 20.

WHEN the traveller has arrived, his best way is to go to an inn, of which Valetta contains several good ones; one is kept by an Englishman, two by Frenchmen, one by an Italian, &c. for he has then time to chuse, with more ease, a furnished, or unfurnished house, or lodgings, as he likes it, of which the furniture, however, is indifferently composed, to what one is accustomed to in London, because nothing is here made of mahagony wood, nor are the domestic arrangements so comfortable, as in this metropolis.

§ 21.

The first thing patients look out for, after they arrive, is, probably, *medical assistance*, of which, therefore, I shall now give an account. I am sorry to say, that this cannot be found in that perfection, which the patient, anxious to re-establish his health, might wish.

Among the Maltese physicians, Dr. Naudi, professor of chemistry, is the best ; he understands a little of both the English and French languages. He has been brought up at Naples, and is acquainted with literature, and a friend of natural history.

The Protomedico Dr. Caruana, is a man of talents, but cares little for practice, and speaks no English, and only very broken French. Under his care is the lazaretto, and the medical police of the whole island.

Dr. Gravagna has the greatest practice, and is a reasonable, good man, and one of the physicians to the hospital.

The others are not worth being named ; one single consultation shews them to be physicians, without knowledge and judgment.

§ 22.

There is no English, nor any other foreign physician, but only army surgeons, of whom some profess *midwifery* ; in which branch, the hospital mate, Mr. Iliff, has the greatest practice, and deserves the confidence he enjoys.

§ 23.

The *apothecaries' shops* are, upon the whole, indifferent ; but there is, within a few years, an English one established, which is pre-

ferable to the Maltese, but far from being perfect ; this cannot be expected, because both the owner and the shop-keeper are army surgeons, who generally understand little of pharmacy ; medicines are sold dear, there being no rival shop, and a Maltese apothecary is not able to make up prescriptions, written, according to the London pharmacopœia. The native apothecaries have little knowledge of chemistry, pharmacy, botany, and mineralogy ; because none of these sciences are taught at the university of Valetta.

§ 24.

Surgery stands, upon the whole, worse than medicine does ; because the Maltese surgeons are not able to perform any important operation, at least not according to modern improvements. Some do not venture to perform any operation, beyond bleeding, cupping, and blistering. Nobody performs operations on the

eyes, nor is there any dentist. I wished once to have a cancerous breast of a female patient taken out, but could find no Maltese surgeon who was able to undertake the operation. Mr. Speranza, however, is the best of them.

§ 25.

After the convalescent has chosen his physician or surgeon, he ought to know something about his *provisions*, of which I am therefore going to speak. He will find the market in a large square, in the middle of the town, perfectly well provided with all kinds of animal and vegetable food, fish, fruits, eggs, &c. all of which, for the convenience of the buyers, are sold at the same place.

There is, however, another large separate fish-market, near the sea; and vegetables and fruits are sold in different shops throughout

the whole town, and also offered in the streets for sale.

§ 26.

Butcher's meat is good, and cheaper than in great Britain; the animals are brought mostly from Sicily, and the oxen improve after their arrival, by being fed with cotton-seed, which fattens them much; they can obtain it in great abundance, as the cotton plant is the most common production of the island.

Some oxen and other animals are also imported from Africa; and these poor beings are first put into quarantine, before they are slaughtered, and their meat sent into the market, though there exists no instance that animals have got the plague, much less, that they have propagated it. Prejudice consequently ren-

ders the oxen dearer, by feeding them so long, without any use, in the lazaretto.

Malta having no pasture ground, oxen can consequently not be bred there, and the sheep are far from being sufficient for the consumption of the inhabitants.

§ 27.

Mutton and *veal* are rather scarce in the market, and the first is inferior to that of this country. The sheep are much smaller than here, probably on account of the scanty and frequently parched pasture they are confined to.

§ 28.

Pork is to be had good and in plenty, it being the common nourishment of the inha-

bitants ; they eat it mostly salted, the whole year round. The pigs ran formerly in the streets of Valetta, which practice is, however, now prohibited. The inhabitants breed a sufficient number for the whole consumption of the island.

§ 29.

Smoaked hams, tongues of oxen, smoaked, salted, and dried fish, come in sufficient quantities from England and Italy, smoaked sausages from Calabria, and camels' tongues (a great delicacy) from Egypt.

§ 30.

Kids and rabbits afford a frequent nourishment to the inhabitants, and are not only sold in the market, but each Maltese family rears them for their own use.

They are fond of another domestic animal, the *guinea pig*, which is extremely prolific, lives on all kinds of offal, and tastes nearly like a fowl.

§ 31.

Fowls are, in general, excellent, and cheaper than in England. Turkeys, ducks, hens, capons, chickens, guinea hens, and pigeons, are remarkably good, and the latter especially, are larger and more savoury, than in this country; geese, on the contrary, are inferior and scarcer.

Owls and *sparrows* are, I believe, the only birds which live in the island, and their young ones are brought to market.

There is no game, except birds of passage, in their season, (spring and autumn); the most general of which are *quails*, *snipes*, seve-

ral kinds of *wild ducks*, some *paperæ beccafigues*, &c.

Quadruped game is now and then brought from Sicily, *viz.* hares, porcupines, &c.

§ 32.

Milk is supplied by goats, which are driven in flocks through the city, and milked before the houses, in order to obtain it unmixed with water. *Asses' milk* is to be got in the same way, from healthy animals, consequently in the highest perfection, and salutary for convalescents.

§ 33.

The Maltese make an *inferior kind* of *butter* and cheese from goats' and sheep's milk, which is, however, far from being sufficient for the consumption of the inhabitants;

their want of butter for culinary purposes is supplied with olive oil, which comes in plenty both from Sicily and Africa; and salt butter is sent from Ireland, for the use of the English inhabitants.

Cheese, for the use of common people, comes from Sicily; English cheese is sold in plenty; Parmesan, Swiss, and Dutch, though less used, are, however, to be got.

§ 34.

Coffee, tea, sugar, ale, porter, pickles, spices, cocoa, potatoes, and a number of articles of English manufacture, such as leather, cloth, paper, buttons, hats, muslins, gloves, optical instruments, &c.* are sufficiently provided by English and Maltese shop-keepers.

* An English optical instrument maker has lately settled there.

§ 35.

Fish is excellent, and in abundance; a few are inferior to the same kind, in this country, *viz.* oysters, lobsters, and crabs.

Fresh water fish are not known, because there is no river, or lake in the island.

Tunny comes, when in season, (in the month of May) in great quantities from Sicily, and is the cheapest of all.

The *turtles* of the Mediterranean sea are less delicious than those from the West Indies.

The Maltese delight in eating *polypi*, especially the cutle fish (*sepia*), being cheap and nourishing.

§ 36.

The *bread* is made from wheaten flour, well baked, and tastes savoury. They have the custom of spreading the seed of sesamum orientale upon its crust, to give more flavour to it. They also use the same seed a great deal in their kitchen, especially in made dishes and soups, for which reason the plant is much cultivated.

Wine of every quality, from twopence, and less a bottle, to some Spanish dollars, can be purchased.

The common wines of Sicily, Greece, Spain, and France, serve as beverage for the lower people.

Very good genuine *claret* does not cost quite

five shillings a bottle ; port-wine comes to hardly two shillings ; to some persons only *one*, if bought in any quantity.

Marsalla is a common, excellent, and wholesome wine, and not dear ; the bottle does not exceed one shilling, if bought in any quantity. It is known in England under the name of Sicilian Madeira.

Sherry costs nearly the same price.

§ 37.

Rum and *brandy* are in high perfection, and cheaper than they are sold in this country. *Porter* and *ale* are also excellent ; the bottle does not cost one shilling, if bought in any quantity.

§ 38.

Vegetables are in abundance, and cheap; some however of less flavour, than in England. To these belong turnips, carrots, and potatoes; others, on the contrary, are better flavoured, such as cauliflower, brocoli, and artichokes. Some, cultivated in this country, are wanting, *viz.* asparagus. Others grow there, which are not known here, *viz.* a sort of oblong pumpkins, which is a common food. The inhabitants eat them either by themselves, or filled with minced meat, or in soups; the fruit of solanum melongena, love apples (*solanum lycopersicum*), are in much greater use than in England; they use them likewise in soups, sauces, boiled by themselves, or with meat, likewise filled with minced meat, nearly the whole year round.

Some vegetables taste equally savoury, as

they do here; such as green pease, French beans, several sallads, celery, &c.

Potatoes have not been so long known, and are consequently not so much used, as they are in England, though they are now cultivated in the island. The inhabitants in general, as is commonly the case, in the beginning of the cultivation of this vegetable, do not like them.

§ 39.

The Maltese consume a great deal of vegetables; they eat, artichokes, celery, onions, hogbeans, lupins, cicer, pickled olives, green figs, prickly pears, raw, with bread, or chesnuts alone. This, together with some wine, frequently makes their whole nourishment for the day. Often they eat the whole day nothing, but oil on their bread, with some salted anchovies, or herrings, or dried fish, especially on those days when their religion does

not allow them to eat meat, which is the case, not only during the whole Lent, but every Wednesday, Friday, and Saturday, and on many more holidays in the year. No people in the world live more frugally than the inhabitants of this island.

It is for every body a pleasant, and for the natives a useful, circumstance, in a pecuniary respect, that garden stuffs grow in the open air, during the whole winter, and that even many are in a higher perfection, in that season, than in summer, on account of the rain, which then moistens the land, and of the sun not being too powerful.

§ 40.

Fruits are excellent, and sold in great quantity, partly produced by the soil of the island, and partly sent from Sicily, Africa, and Asia.

To the first belong delicious figs, oranges, sweet and sour lemons, musk and water melons, prickly pears, nectarines, apricots, peaches, grapes, pomegranates, strawberries, mulberries, and caroobees*. To the second belong oranges, lemons, grapes, (Malta does not produce enough of these three kinds of fruit for its consumption), chesnuts (which are sold roasted in the streets), walnuts, filberts, apples, pears, cherries, plums, sorbi, dry figs, raisins, currants, dates, almonds, pistachios, &c.

§ 41.

Most of the water, used in the island, is rain-water, collected from the roofs of the houses in cisterns, which are cut into the calcareous

* The caroobee tree, *ceratonia siliqua*, is one of the most common in the island. It grows in the chasms of the rock, and its wood serves as fuel. The common people and children eat the *siliqua* with pleasure, which has a flat, sweetish taste, but is, on account of its saccharine particles, nourishing. It serves mostly as food for horses and mules, which it fattens.

rock under the habitations, to which it is conducted by earthen tubes. Every body, who keeps his roof clean, must therefore have excellent water, of neither taste or colour, because rain-water is the purest of all.

If the cistern under the house should not be sufficiently extensive for the consumption of the family, the water is supplied in Valetta by the aqueduct, from the Bochetto. This is, however, not conducted to the other towns of the harbour. In Burmula, Isola, and Vittorioso, therefore, the families who have more spacious cisterns than they want for their own use, allow those, who are in want of water, to profit of their superfluity. Water is also brought in casks from the neighbouring villages, and sold in the streets.

Besides this expedient, there are in Valetta and Vittorioso *public cisterns*, which are opened in the summer season for every body's use.

These are the principal things which I thought necessary to communicate concerning medical assistance and diet.

I proceed now to other objects also of great interest to patients.

CHAP. III.

OF AMUSEMENTS, WITHOUT BODILY EXERCISE.

§ 42.

I CONTINUE to relate the amusements convalescents safely enjoy, they being under certain restrictions, contributing to the recovery of their health.

I begin with two great resources, invalids of any education meet with, to pass their time nobly and pleasantly ; I mean the *two public libraries*, which serve for the best of all amusements, namely, for information and improvement.

§ 43.

The best and most numerous one consists of 30,000 volumes, in all branches of science and arts. It is especially rich in mathematics, and belles lettres, in the French tongue, because the collection begun in time of the order, of which the greater number of knights were Frenchmen; every one of them was obliged to leave his private library to this public one, when he died.

There are books nearly in all European, and some other languages, especially in the Arabian; also some hundred, mostly classical works, of the English literature, *viz.* Milton, Shakespeare, Hume, &c.

In such a numerous library, considering the way it has been collected, that is to say, as the books came by chance, and were not bought

on purpose, some must be of course of no use; however, every body, whatever may be the degree of cultivation of his mind, will find sources of pleasure and information, for a long time, because there are books from the slightest novel to the gravest mathematical works, journies, voyages; poetical, botanical, and military treatises; and, in short, publications in all sciences and languages.

§ 44.

The access to the library was formerly only during three hours in the morning, and two in the afternoon, from which the vacations were still excepted, which happened too frequently*; but a committee, appointed by the governor, has rendered it more useful, because, for a subscription of two Spanish dollars every six months, the subscriber has a right to take to his home

* They were, however, diminished since the French possessed the island, though not entirely abolished, as they ought to be.

three volumes in 8vo at a time, and to change them every day, or to keep them for a fortnight, and so in proportion to the size of the books he chuses; for which money the library is augmented with new books, especially of English literature.

§ 45.

The catalogue of the books which are lent out, is printed in an alphabetical order, and sold. Only some rare and costly books, and some with engravings, are excepted from the whole number, which is hardly any loss to the subscribers, because they may repair to the library, and read them there gratis, where no book dare be refused. It is still opened twice a day, except during the three hot months, July, August, and September; and every Thursday and Sunday, also the last time of the carnival, holy week, a fortnight at Christmas, &c.

§ 46.

In the same house and rooms, are also kept a *collection of medals, antiquities, viz. statues and busts, basso-relievos, of marble, &c. fossils, preserved animals, such as a lion, a crocodile, birds, artificial curiosities, &c.*

§ 47.

During the existence of the order, a fine spacious building was erected *for this library*, joining the palace of the grand master, being one side of a large square; in which edifice the shelves are put up already in the large saloon; but, notwithstanding, the books remain in the old, incommodious building, of which the worst quality is its smallness, not being capable of containing all the volumes which belong to the library.

A Maltese physician, for instance, left by his last will all his books to this public collection, consisting of 6000 volumes, mostly medical ones, which all remain, for want of room, packed up in cases, and stand in the new building. This loss is the greater, because the library does not now possess many medical works. There are, however, some classical works to be found, such as Hippocrates, Galenus, Celsus, Sanctorius, Baglivius, Van Swieten, Willis, Lieutaud, Pott, Buffon, Hortus Romanus, the French Encyclopædia, &c.

§ 48.

I dare not omit, on this occasion, to acquaint the traveller with the *worthy librarian*, *Abbate Navarro*, who distinguishes himself by his talents, his learning, his morality, his politeness, his communicative and liberal conduct to all strangers, both speaking and writing several modern and antient languages in a high-

perfection, and by his being an excellent antiquarian, which eminent qualities make his acquaintance a valuable acquisition to all persons of any knowledge, and his society instructive and pleasant to every body of sense. The place of librarian he has held for more than thirty years, and his zeal and study have made him thoroughly acquainted with the literature of all nations, by which his conversation acquires a particular interest. His income is small, but he lives as a philosopher should do, content with what he has, accommodating his expences to his income, and is, by that means, perfectly happy.

§ 49.

The other public collection, called the *garrison library*, is inferior to the former, because it is of a later institution, and contains not quite 2000 volumes, all English works, novels, poetry, journies, history, military treatises, sermons, &c.

A peculiar convenience of this institution, are three or four English newspapers, whose perusal is included in the subscription price of three Spanish dollars every six months. They arrive commonly once, sometimes twice a month, with the packet, and can be read from morning to night. Till 1806, Leiden and Florence papers were also taken in, but it is now an impossibility to get them.

In furnishing books to the subscribers, it is not so liberal as the old Maltese, because it only allows the subscriber one volume at a time, except they are in 12mo. of which he may have two. A volume in 4to he is permitted to keep nine, in 8vo six, and in duodecimo three days; but he may also change them twice a day if he pleases. After this period is elapsed, the permission to have a book longer can be renewed for half the original time. But whoever detains a book longer than the laws allow, is fined, and the fine is doubled, tripled, &c. in

proportion to the number of days it has been kept over the fixed term.

The library is placed in a small back room of the house, which was built with the intention of placing the original Maltese library there. The librarian attends every day, from half past ten till half past three o'clock, Sundays excepted.

A long, narrow room joins the library, destined for reading, of which, however, hardly any use is made, because every subscriber reads the books, with more leisure, at home.

A third spacious room joins this, and serves for reading the newspapers, which is lighted in the evening, if readers attend.

§ 50.

Besides these two public libraries, there exist also *two private circulating ones*. The best is

kept in a part of the same edifice of the garrison library. It has a good choice of books, especially of Italian literature.

The other is kept by a Jew, and cannot boast of a great variety of books. The subscription price for both is a mere trifle.

§ 51.

Booksellers are hardly worth being named, because they have only few, and mostly old books, to sell. Some English shop-keepers now and then get a few books from England for sale.

§ 52.

The only *printing office* belongs to government. Though hardly any book is printed there, it has more commissions for printing avisos, proclamations, government orders, al-

manacs, catalogues of things to be sold, newspapers, &c. than it can execute.

§ 53.

I shall next mention *music*, as it is a pleasure well calculated for the entertainment of patients, being even in some cases an auxiliary remedy in the cure of diseases.

The *Italian opera*, which affords this amusement more perfectly than any other public place, is represented five times a week, and a seat in the pit is to be got at the moderate price of 1s. 4d. Boxes, however, in the first and second tier, can only be hired by subscription for a whole season; but the subscribers are very liberal in lending the key to their friends those evenings they do not go themselves.

The governor had even two boxes, of which one served always for his friends.

Both instrumental and vocal music, as also the house, are better than could be expected in a town of 24,000 inhabitants.

Ballets are danced with expertness, grace, and agility, between the acts, and at the end of the whole opera; a custom prevalent in all Italian theatres.

The amusements of this theatre can be enjoyed the whole year round, Lent not excepted, when the representation only changes into tragedies and comedies. The representation of these plays lasts till about two weeks after Easter; when the opera begins again.

Italian dramatic authors, as well as actors, are inferior to English, German, and French, therefore they cannot be expected to exist there in perfection.

§ 54.

In the *square before the palace*, during the latter end of spring, summer, and autumn, three times a week, from seven to nine o'clock in the evening, *music* is performed by the bands of the different regiments, which the company enjoys walking in the square.

Close to it is the best coffee-house, where refreshments are to be got, and where delicate ices, and iced lemonade* is sold, from twelve o'clock at noon till midnight, and where the Maltese newspapers are taken in ; formerly also, the Florentine ones.

* The snow, for its preparation, is brought from Mount Etna.

§ 55.

The guests both at the governor's *public* and private dinners, as also those at the officers' messes, enjoy the harmony of music during them,

§ 56.

The governor's band *plays* likewise from the middle of the spring till the middle of autumn, every Sunday evening, *in the botanical garden*, and heightens the pleasure of taking fresh air.

§ 57.

There are also now and then *concerts* given by private families, or officers, to which every body, who is admitted into society, is invited.

Good masters, as well in vocal as in instrumental music, can be obtained on moderate terms.

§ 58.

Society is another pleasure, which, exhilera-
rating the mind, promotes the cutaneous per-
spiration, and proves for this reason beneficial
for convalescents, provided it is enjoyed at
proper hours.

There exists so much conviviality, that a new
comer, as soon as he is a little known, can live
in society, almost every day, if he chuses it.

§ 59.

Both English and Maltese ladies and gentle-
men meet at the *governor's** once a week, in

* Though this worthy man just died, there is no doubt that his successor will continue the same custom.

winter, in town. They meet after the public dinner, at eight o'clock, and remain together till after ten. Tea and lemonade, with sweet meats, are the refreshments presented. A great number amuse themselves with cards, others with conversing together.

§ 60.

Some married officers, as well as gentlemen employed in the civil branch of government, and wealthy *merchants*, keep good houses, and vie with each other *in giving dinners, balls, and card parties*, especially in winter, and during the carnival. Whoever is desirous at that time to ensure the society of a friend, is obliged to ask him many days before.

§ 61.

Cards are a common amusement in society. Whist, cassino, and loo, are the usual games,

of which the first, in the governor's house, is never played higher than one shilling the fish ; which good rule is, of course, imitated in all other societies. The small sum, which can only be lost, insures, that the passions are not raised, and that consequently a convalescent may safely sit down to enjoy, for some hours, a quiet rubber of whist.

The hours of most of these social pleasures not being late, and the moderation which is generally observed in drinking, allow people, even in a weak state of health, to partake of them.

CHAP. IV.

OF PLEASURES COMBINED WITH BODILY
EXERCISE.

§ 62.

AFTER having related the salutary amusements which are mostly enjoyed sitting, I am going to speak of those which *unite* at the same time *bodily exercise*, and are, for that reason, particularly well calculated for restoring impaired health. Means for procuring them, as carriages, called caleesses, horses, mules, and asses, are to be found in plenty, the whole day, at particular streets; also boats in different parts of the spacious harbour.

§ 63.

I must speak, in the beginning of this chapter, of the *sea-baths*, serving mostly for the recovery of health: as to use them properly, exercise must be united with them. They are built of wood, by government, at the end of a small harbour, called *Pieta*, and let to a person for a small sum, who furnishes refreshments and breakfast to the bathers. The price for the best bath is 8*d.* and for the other 4*d.* They are neat and clean.

The carriages, though pretty convenient, differ much from those in other countries, having only two wheels, and nearly of the shape of an English postchaise; are drawn by one horse or mule, close to which the coachman runs barefooted, commonly with a red cap on his head, without a neckcloth, the arms stripped from the

sleeves of his shirt, a waistcoat (often silken) without sleeves, at which a double row of round silver buttons hang; a scarf, and a pair of pantaloons, carrying no whip, instead of which, he pinches the animal with his nails, and guides him by a single rope, flung round the nose. Even if there are two reins, (which is commonly the case with those belonging to English gentlemen) the coachman ties them both behind, at the harness, and guides the horse by the additional rope slung over the nose.

It is remarkable, that though the drivers run on foot, they commonly gallop the horse.

The monthly hire of a two, or four seated caleesse, animal and coachman included, is sixteen Spanish dollars, or one dollar a day, if taken by that time. There is, however, an exception to this price, on particular days, *viz.* St. John's, Gregory's days, &c. when they are dearer, because they are more wanted.

With respect to shape, they model the two seated ones after English post-chaises, and their form becomes consequently more elegant than they formerly were.

§ 64.

Both *hackney horses* and *mules* are pretty good, and *asses better*, than any where else in Europe. The price of a day's hire for each is one Spanish dollar. The animals stand during the whole day in the streets, ready to be mounted, and consequently are fed there too, with hog-beans, barley, caroobees, straw, and *sulla*, (a valuable plant of the island, of the family of *hedysarum*) it is like clover, but at least three times as high, and makes, by its oblong scarlet flowers, a fine ornament of the fields. It fattens the animals both in its green and dry state, to such a degree, that the Maltese allow them no corn in the time they feed them with *sulla*. It is, besides, a wholesome nourish-

ment, and given as forage during two or three spring months to the horses of the garrison.

When the plant is once sown, it grows four or five years, and must then be sown again. Except this valuable production, neither clover nor grass, nor any other fodder for animals, grows in the island.

§ 65.

One of the *first tours*, commonly made in company with some friends, (either in caleesses or on horseback) is to a beautiful spot, called *Boschetto*, about seven miles from Valetto, formerly one of the summer residences of the grand master. The palace of this garden is well situated upon a hill, but is falling into ruins, wherefore it is only employed as a prison for French officers.

Though the garden is not kept in perfect

order, it is, notwithstanding, a pleasant, beautiful, and romantic spot ; hilly, shady, and provided with water. One part of it is a kitchen garden, but the greatest part is planted with bitter orange, fig, olive, and mulberry trees, which is pleasantly surprising for an Englishman, who never was so far to the south.

The walk, in the shade of these orange trees, is nearly the only place in the island where one is enabled to go to this extent in the shade of trees. This pleasure is encreased by some small rivulets, and reservoirs of water, at the side of the walks.

The company take a cold dinner, wine, beer, &c. in their caleesses with them, and consume it in social pleasure, in a grotto, and on a table, and on benches of stone, at the source of the aqueduct, which carries the water to Valetta.

The company hardly begin to enjoy the pleasant coolness of this grotto, when already

musicians attend, who not only endeavour to amuse, during dinner, with their harmonious sounds, but play also, for the reward of a few shillings, when the dinner is over, to a rural dance.

The heat in summer, and in the beginning of autumn, prevents people from making parties to this delightful spot, and they are therefore made in other seasons of the year.

§ 66.

The principal amusement of this place is on *St. John's day*, when a great number of the natives of the whole island meet. They first hear mass in the neighbouring chapels, and spend afterwards the day in convivial pleasures. They travel to this spot in parties from all the twenty villages of the island, in caleesses, on horse, mule, ass back, and on foot, and take in a sack, tied on the side of the animal, a cold

dinner with them, probably the most sumptuous they eat the whole year round, and consume it in previously arranged parties, sitting on the ground, under the shade of orange trees.

They are on this day remarkably hospitable, for one does not pass any of these dinner parties without being asked to partake of it. One dare, at least, not refuse a little wine or rosoglio, for fear of giving offence; though the number of persons who come from Valetta, to enjoy a sight of this feast, (without being provided with a dinner) is considerable, as will easily be imagined.

Both sexes appear in silk dresses, of different, commonly lively, colours, which add to the gayness of the scene.

New married women stipulate it commonly as an article in their marriage contract, that the husband is obliged to attend them, (at least the first year), at this day, to the Boschetto,

where they appear in the same dress which they wore on their wedding day, commonly consisting of a rose-coloured jacket of silk, and a sky blue petticoat of the same stuff, with golden chains round their neck.

The men wear mostly a red cap, no neck-cloth, a high coloured silken jacket, with a double row of hanging silver buttons, a scarf, a pair of silken pantaloons, no stockings, but shoes, with immense large silver buckles.

Every body, provided he does not suffer by hypochondriasis, must get merry, by seeing so much merriment in all parts of that extensive garden.

Music is heard every where, and national dances are exhibited with dexterity, lightness, and agility; but men only dance with each other, women thinking it indecent to dance in public.

The whole society disperse at an early hour in the afternoon, because many of the visitors come from a pretty good distance; and the spectators of this gay scene return to town to dinner.

§ 67.

Civita Vecchia, the ancient capital of the island, is another interesting object for a country party, where, besides the modern cathedral, built in a rich, gothic style, the ancient catacombs are worth the attention of the traveller; though the guide to the last, an ignorant young priest, converts them in his explanation, into subterraneous habitations of the Christians, to hide themselves against the cruel Saracens, who were then in possession of the island. To prove his story better, he shews the places where the concealed Christians had their mills *, their church, their beds †. &c.

* This is the place where an altar stood.

† These are places in the rock to put the corps in.

But every body who have seen catacombs in Italy, Sicily, &c. and can make their conclusions by comparison, will find that they were ancient burying places.

§ 68.

It will be interesting to see also *smaller burying places*, for one family only, found in different parts of the island. One of them was opened in 1806, by a Mr. Scerri, in rendering a rock arable. In doing this, it is a common usage to break the upper layer of the calcareous stone, under which soil is generally found.

While the men were occupied at this work, they heard, through their instruments, an unusual sound, which induced them, in expectation of finding treasure, to dig deeper; in doing this, they came to a vault, where, after

having opened it, they found five skeletons, some ugly urns, and other vases of common workmanship, and of coarse materials.

§ 70.

It is advisable to make some *other pleasure tours* to different parts of the island, *viz.* to *Marza Scirocco*, a small unsafe harbour, where, in 1566, the Turks landed, and took possession of the whole island, except *Vittorioso**; which circumstance gave the name to the place.

To the former inquisitor's palace, which is now in a state of decay; to St. Julian; to St. Paul's bay, where the apostle stranded, which accident gave the name to it; to an immense earthfall, now cultivated with fig-trees and vines to the very bottom; to *Micabiba*, whereto the Maltese go, one day in the year, in procession, &c.

* *Valetta* was built afterwards.

§ 71

Another rural place, where the whole society from the capital meet once a week, in the summer, is *St. Antonio*, already mentioned. They walk in the garden, the best in the island, enjoy music and conversation, and take tea, lemonade and sweetmeats, as refreshments. The younger part of the society, and sometimes the old ones too, dance in the garden, for music attends from six till ten o'clock. In October, when the days grow shorter, a part of the society retires, after having walked to the rooms of the spacious house, to play a rubber of whist.

§ 72.

The distance from Valetta to this garden is not quite four miles; an excellent road leads

to it, on both sides of which are high walls, which is the same case with all the other roads in the island. The inclosures of gardens and fields are made in the whole island of stone walls, to prevent the rain from washing the land away, which gives a more barren aspect than really is the case, because the cotton, the most common plant, being lower than the walls, nothing green strikes the eye passing the roads, though within the walls the soil is perfectly well cultivated.

The fixed price for a caleessc to St. Antonio was half a Spanish dollar, when I came to the island, but is now encreased.

§ 73.

This garden has been much improved by its late possessor ; it is distinguished by a greater variety of plants and trees than the gardens in that country commonly possess ; there are wal-

nut, sweet chesnut trees, and many plants more, which are found no where else. It will continue to improve, by the late arrival of an English gardener, who brought with him a number of trees, shrubs, and plants, *viz.* raspberries, gooseberries, different apple and pear trees, several kinds of cherries, plums, &c. &c. till now unknown, of which many, certainly will succeed, and be propagated. He brought likewise some tea plants with him, whose success, however, I doubt. The principal use of this gardener is, that he grafts and teaches this art, unknown in Malta, and horticulture altogether, to every body who wishes to learn it.

§ 74.

All these rural parties are well calculated for convalescents, because, in general, the society sets off neither too early in the morning, nor do they return too late in the evening. Even the winter days are so mild in that

climate, that nobody is ever in danger of catching cold, if he does not expose himself to a draught of air.

§ 75.

Except at Valetta, *there is no inn*, either in the ancient capital at Civita Vecchia, or in any other village. This appears, at first sight, rather inconvenient for pleasure parties. However, it is a want not much felt, in so mild a climate, where injuries from the weather are seldom to be feared. I rather think, that the more natural way in which the company is obliged to eat and to drink, increases the rural pleasure.

Sometimes a Maltese gentleman lends his country house to a party, to dine in; sometimes the dinner is laid out in a peasant's hut; sometimes on the ground, under a tree; sometimes on a table, borrowed from a peasant; or

in St. Paul's bay, in the guard-house ; in fact, one does as well as one can, and enjoys the pleasure which society, climate, and exercise afford, without deriving it from mahogany tables.

§ 76.

Whatever direction of the island is examined, one has the pleasure to find the smallest spot of soil cultivated, and the villages better built, than in other countries. All the houses and churches are fabricated of hewn stones. The last rather in a rich, gothic style, upon a place surrounded with trees, often also with statues of saints. In none of the villages appear signs of distress, nor are convents to be seen, which exist only at Valetta, Civita Vecchia, Burmolu, Vittorioso, and Isola, and the number of their inhabitants, both friars and nuns, are decreasing from year to year.

Notwithstanding the very good cultivation

of the land, which lasts the whole year round, the traveller never enjoys, in his little tours through the island, the pleasure of remarking a beautiful view, because they are neither extensive, nor hilly, nor woody enough; and the entire want of rivers and mountains, likewise the enclosures, with, often, high stone walls, render, at any distance, the landscape dead, though within them there is the greatest fertility to be met with.

§ 77.

I mention also the *botanical garden* as a pleasant recreation, and as an agreeable and common walk, both for English and Maltese, for all ages, sexes, and classes of people.

Devout monks walk near dashing officers; young, blooming girls, wishing to attract notice, near decrepit men, who feel no attachment either for their neighbour, or for this life alto-

gether ; nurses, paying more attention to the society than to the infants trusted to their arms ; English ladies, tastefully dressed, next Maltese ones, covered with the saldarra* ; and, to fashionables, it is Bond-street.

The institution of this garden does credit to Sir A. Ball, under whose auspices it has been founded ; though I cannot be quite of the opinion of the author of the inscription cut in a marble stone, put in the wall, near the entrance of it, who says, that this botanical garden was begun and finished under Sir A. B. &c. because a botanical garden never can be called finished, till all the 40,000 plants, and perhaps more, already known, are collected together ; which never can be accomplished.

* This expression means a black silken cloak, (common women take, instead of it, one of their petticoats) which hangs from the upper part of their head to the end of the waist, and in which they envelop this part of the body in a manner, that nothing can be seen but a small part of the middle of the face. No lady or woman can decently leave their house without this garment.

On both sides near the entrance door, which is guarded by a sentinel of the Maltese veteran corps, are large cages with birds. In the one of the right side, are mostly canary birds, mixed with some others, *viz.* a pair of red partridges, goldfinches, a pair of American birds, &c. and in the cage of the opposite side, are mostly pigeons of different kinds, blackbirds, &c. The pleasure of this collection would be increased for amateurs of natural history, if the variety of birds was greater than it is; an advantage which could be easily obtained.

In the midst of the garden are two broad gravel walks, where the people walk under the shade of vines, on both sides of which are benches of stones, which afford a comfort for the tired.

The whole ground is, without any apparent reason, separated into three divisions, of which one or two are frequently locked up, which consequently prevents the walkers from enjoying them.

Some small buildings join the garden, of which the one is intended for a lecture room, another for drying plants and seeds, another for putting working tools in, &c.

It is well provided with water, coming through the aqueduct from the Boschetto; which circumstance promotes highly the vegetation, which otherwise, of course, must suffer in a climate, where it does not rain during the whole summer, and where the soil is every where shallow, especially here, because the whole place was, a few years ago, a naked rock, upon which the soil was mostly carried.

Though there is no green-house nor hot-bed, the garden could, without either, be flourishing and rich, in respect to plants, in that very mild climate, if the professor of botany was a more zealous, active, and learned man. Plants from Africa and Asia grow there; even many of the seeds which Lord

Valentia brought from the East Indies, succeed well in the open air,

I have seen indigo, solandria, many species of cactus, aloes, euphorbia, papyrus, and a number more of exotic plants, in a luxuriant state, in the open air. Ricinus grows not only to a considerable height in the garden, but is cultivated over the whole island, and its oil is found to have the same purgative quality as that sent from the West Indies, and has the advantage of not being rancid,

The fungus melitensis (*cynomorium coccineum L.*) which does not naturally grow in Malta, but only in Gozo, is also cultivated in the garden there.

In some ponds grow a few water plants, and they contain also a number of Chinese goldfish, all which appear on the surface as soon as any body approaches the water, in hope of getting

some bread crumbs, with which they are accustomed to be fed by the passengers. They increase, by their beautiful colour, by their handsome shape, and by their liveliness, the pleasure of walking.

The professor, Don Carlo Jacinto, a Carmelite monk from Genoa, has published a catalogue of the plants of the garden, which, however, contains many more than the garden does.

It is a pity, that the professor, instead of increasing the number of different plants, only augments the copies of them, to fill up the place. Marygold, wallflowers, roses, pinks, valerianas, geraniums, aloes, &c. are found by scores. Crowns are planted with lavender, or sown with cresses, &c. which seems to be calculated only to please children.

For these reasons, the garden serves more as a pleasant walk, than as a place of instruction. Its situation for walking is the more conve-

nient, as it lies within half a mile of town, between it and Florian. It is open from morning to evening, and nobody is prevented from entering it.

§ 78.

Near this, there is *another pleasant garden at Florian*, one of the best in the island, which owes its improvements to the late General Villette, where ladies and gentlemen are allowed to walk, and where the commander in chief of the two islands has his country house. The bananas (*musa paradisiaca L.*) grow in the open air, and bear ripe fruits. There is more shade than what is commonly to be found, and it is well provided with water.

§ 79.

A useful manufactory of common earthen ware deserves likewise attention for half an

hour, and it is worth while to direct a walk or a ride to it. Government, indeed, has lately built it for Dr. Naudi, near the sea, (the Maltese call it the Marina) to fabricate common vessels, which formerly were brought from Sicily. The clay is found at Gozo, though not in a very pure state.

§ 80.

It also will afford pleasure to take a drive to a cotton manufactory near *Civita Vecchia*, which was begun, and brought to its present state of perfection, by the endeavours of the Canonic Caniana, a distinguished, zealous, clever, and active gentleman.

In the beginning, the institution was supported by the late pious Bishop Labini, but now it is able to support itself. The humane idea of the bishop was to employ and support females, who have little opportunity to find a

livelihood, and of which many, in consequence, were exposed to want. He granted a house for this manufactory, which previously belonged to the church, to spare the costs of the rent.

The canonico employs now more than one hundred female labourers of all ages, (young children not excepted) and sells the produce of their labour as cheap as possible, only to maintain the institution. He manufactures there many kinds of cotton stuff, as, table cloths, napkins, towels, cloth for common apparel for both sexes, cloth for lining coaches, for shirts, carpets, reins of horses, &c. The worthy enterprizer is such a zealous and happy speculator, that he is enabled to make every year additions and improvements to the institution.

§ 81.

Cotton manufactories altogether have been

much improved since this war made the exportation of raw, or spun cotton, more difficult.

Spinning and weaving it is now a general employment of the female sex, as well in the towns as in the villages. They weave every where table cloths, napkins, towels, cloth for shirts and for coats, for both sexes, remarkably well. They are, however, not advanced in the same degree in the dying art, especially in giving it the black colour, which is not only indifferent, but does not stand.

§ 82.

A ride to Cazal Zeitun, will be an amusement, on St. Gregory's day, to see the greatest and most brilliant procession to the church of this village, in which the bishop, higher and lower clergy, a deputation from each parish, a number of volunteers, and spectators, meet. The

procession assembles at a green place, near Casal Nuovo, a village built by the grand-master, Pintod, and goes from there one mile and a half further, meeting in the way the bishop, with his canons, who come from Civita Vecchia, (the bishop's see) and join the procession about half a mile before it ends. The colours of all the parish churches are carried ; they are of an immense length, and massy with silver ornaments. The man, who is trusted to carry them, feels therefore much honored by the trust, thinking it a public and indisputable testimony of his strength ; so much so, that he often pays money for the votes on his election. They are particularly proud of this public mark of distinction, if the day is windy, as this circumstance encreases the difficulty of carrying the heavy standards. Commonly it blows a little in the season when the feast is celebrated, for the late bishop postponed this procession till the week after Easter, on account of the irregularities which generally accompany great processions, and which the good man thought

of less harm after Easter than in Lent, when Gregory's day happens to be. Besides the standards, a number of Christs, carved of wood, small crucifixes, statues, pictures of the Holy Virgin, lanterns, torches, &c. are carried. It is singular, that nobody can tell for what reason this grand procession is celebrated.

Zeitun, meaning in the Arabian language, an olive garden, seems to prove, that, at the place of this village, olive gardens were formerly cultivated, which no longer exist in the island.

§ 83.

The frequent processions, held in Valetta, in honor of Christ, of the Holy Virgin, or of saints, either by the bishop, canons, clergy, friars, and the public at large, who carry statues and pictures of Christ, of the Virgin, of St. Paul, &c. crucifixes, lanterns, torches, standards; or, only of fraternities, who are uniformly drest, and

each member carries a flambeau, (near which a boy runs, holding a bit of paper under it, to catch the drops of melted wax) or to honor the host, being carried from the church to sick people, or burying children, or eminent persons, will amuse by the pomp, the regularity, and the devotion with which they are displayed.

§ 84.

A walk, or rather a ride in a caleesse in *the street*, towards evening, the last three days of carnival, will highly amuse the stranger, especially if he never happened before to be in that time in a Roman Catholic country, and the sight is a novelty to him. He sees in the streets a great number of inhabitants of both sexes, and of all ranks, walking arm in arm, or whole groupes together dancing, speaking by pantomime, exchanging letters, (probably of love) in characteristic, or common masks, from noon till night. Characteristic masks are seen

riding upon large waggons, others in caleesses, others on horseback, &c. When the day is over, they all retire to the theatre, and dance and converse the whole night, till seven o'clock in the morning, masked, and consequently all classes of people mix. These bacchanals end very frequently with sacrifices to the goddess of Paphos, which are often repented when too late. The last night the people are very punctual to leave off dancing at twelve o'clock, the hour when Lent begins, for they think that then religion does no more allow them to dance.

§ 85.

A walk to St. John's church, in the middle of the town, will reward the trouble one has taken in visiting it. It is a lofty, spacious, rich, gothic building, interiorly richly ornamented with different colored cloths, embroidered and laced, all according to the different feasts of the church. The pavemeut is equally

rich, entirely composed of sepulchral monuments of the finest marbles, porphyry, lapis lazuli, and a variety of other valuable stones, admirably joined together, representing the arms, names, &c. of the persons they commemorate, mostly bailiffs and knights of the order.

§ 86.

Friends of horticulture will have a pleasant drive, half an hour's distance from Valetta, on the road to Casal Luca, to a new and remarkably well cultivated *garden* and *field*, *lately made arable*, by a Mr. Scerri, mentioned already, as having discovered an ancient tomb there. This industrious man has taken from government, for a trifling rent, a barren soil, mostly a naked rock, for ninety years, to make it arable; and, though he has sometimes one hundred men at work, the fertility in this excellent climate is so great, that already, the third year, his income was equal to the ex-

pences ; and since that time he earns a clear profit. He derives a great advantage from two wells, which he has dug in the rock, out of which the water is constantly drawn by a mule, and a pater-noster work, which waters the garden night and day, and makes his vegetables grow winter and summer, as well for his own use as for the market. Passing the road near which this extensive new created garden lies, the whole spot strikes immediately the eyes, in a most agreeable manner, by its pleasing, green colour. The possessor of this farm makes cheese from goats' and sheep's milk together, in the form of Gloucester cheese, which is better flavoured than what they made formerly.

§ 87.

Every body, who makes a long stay in the island, will be pleased to see *agriculture* and *horticulture* *improving* every year. Sir A. Ball has contributed much to this by his con-

stant zeal and ardent wish to improve the felicity of the people. Among other good things he has introduced, must be mentioned, that he rendered a barren surface, near each village, often a naked rock, fit for cultivation ; that he enclosed it with a high wall, provided it with young trees, shrubs, and plants, and gave this, as an additional income, to the justice of peace of each village, obliging him, at the same time, to give gratis to each petitioner of his village, seeds of his plants, to share his shrubbery, and to allow the people to graft from his trees, which the English gardener, I have spoken of before, performs for them. The general benefit of this useful institution for horticulture over the whole island, will be more evident in the course of a few years.

§ 88.

I take this opportunity to observe, that the *corn cultivated*, serves for the consumption of

the inhabitants only three months in the year * ; the rest comes from Sicily, formerly also from the black sea ; the same do barley, beans, and straw, which serve as food for horses, mules, and asses. Oats are unknown.

§ 89.

I must not forget to communicate a peculiar national pleasure, because it will divert, and consequently benefit the convalescent ; I mean the *horse, mule, and ass races*. The jockies ride on these animals, without a saddle ; in consequence of which they are often thrown down, which increases the entertainment. The prize for the quickest rider of either of these animals, as also for the best runner, is trifling, *viz.* a hat, a silken handkerchief, &c. and paid

* They thrash it still in the ancient manner, upon an area in the open field, with the feet of oxen, or mules ; and as the inhabitants of Sicily follow the same custom, no long straw is to be got, because the animals break it with their feet.

out of the public fund, called *universitá*. They are placed opposite the governor's box, from which he, and the people of the first rank, see the raees. The four *giurali** namely, erect temporary boxes for this occasion, and invite ladies and gentlemen of the civil government, families of the garrison, and of the inhabitants, to see the raees, to partake of some refreshments, and to enjoy the music, whieh plays before the races begin. Formerly they were held in town, in *Strada Reale*, a street which goes up and down hill, but, by a better regulation, they run now out of town, near the sea, upon the fine road whieh leads to St. Antonio. Though the concourse of people to this sport is immense, every thing goes off in the best order. English gentlemen amuse themselves frequently in riding races on their saddle

* A magistrate of Valetta, so called, whose principal duty it is to have under their care the provisions, especially the corn, which is preserved in subterraneous cavities cut in the rock. They are commonly changed every year, and the *universitá* exercises the monopoly of corn.

horses, which occasions betting, and other entertainments.

§ 90.

A useful amusement for invalids is, the gentle and wholesome exercise of *billiard tables*, which are found mostly in all coffee-houses and inns*, and in some officers' barracks. The genteest is in the large saloon, built for the library, where also breakfast, and other refreshments, can be obtained.

§ 91.

I am going to narrate what patients have to expect from *dancing*, an amusement also, which,

* Since the war has intercepted the connexion with Italy, no newspapers are taken in, in the coffee-houses, except a very indifferent one, printed, perhaps one sheet, every fortnight, at Malta, in the Italian language; a literal translation of some paragraphs of the last English papers, of which a Mr. Barzoni, a gentleman who enjoys a pension from government, and who is known as an author, is the translator.

under certain restrictions, contributes to the restoration of health, by increasing the circulation of blood, also the cutaneous perspiration, and exhilarating the mind. Numerous opportunities for this amusement occur during the winter.

1. There is a public ball every fortnight in the palace ; one Wednesday given by the civil governor, and the next by the military commander, to which both, English and Maltese, who appear in society, are invited. The dance, beginning at eight o'clock, and being over at midnight, the hours are so reasonable, that most invalids are allowed to enjoy it, if especially they do not stay till the last. No supper being given, interruption of sleep from indigestion, cannot be feared. Those who do not like to dance, enjoy refreshments, society, music, or cards.

2. In the summer, the same society meets

every Wednesday, at St. Antonio, where they dance in the open air, in the garden.

3. Some married officers of the staff, some of regiments, messes of whole regiments, Maltese families, British merchants, and gentlemen employed in the civil department, give now and then balls. Besides, the public masked balls in the theatre, at the end of the carnival, offer frequent opportunities for the amateurs of this amusement.

§ 92.

I shall finish this chapter with describing a recreation of great interest to the man of feeling: I mean the examination of the *poor houses*; and observe, that the indigent are not forgotten by their richer brethren. The late charitable bishop gave the greatest part of his income (which is 40,000 scudi* a year) for the main-

* A scudi is two shillings.

tenance of the poor, and founded an institution for the education of indigent orphan girls, at Florian, which more intelligent and zealous superintendants would easily improve; and all the poor houses would answer their purpose better, if more attention was paid to the preservation of the health of the inhabitants.

Forty poor females get lodgings and victuals in the hospital of the sex at Valetta, in which they are received by the seniority of the recommendation of the rector of each parish in the island. This house is shut against male visitors, who dare not enter without a particular permission from the superiors. The gain of the work of each poor person belongs to the labourer.

Males are under the same conditions received in the sick-house for their sex.

Poor males and females find an abode in a house at Florian, where the first work and

sleep in a large ward, on the ground floor, in which the beds stand much too close, especially when, in winter, the shutters of the openings (there being no windows) are shut, which excludes air and light ; the last in a degree, that one object cannot be distinguished from the other ; which circumstance will lead one to imagine the degree of the insalubrity of the atmosphere. The females live in an upper floor, somewhat better and cleaner. Unfortunately, the several superintendants at this institution, who take the duty by turn, disagree so much in their dietetic principles, that some of them order, in time of their superintendance, the shutters to be constantly shut, and excuse it with the severity of the season, when others of sounder principles order them to be opened.

There lives a surgeon in this institution, for the medical attendance of the poor, who has nothing of a medical officer, but the name.

Chaplains, and a mass must, of course, be in

the house, because the Roman catholics always join both to their charitable institutions.

Near the last establishment is the *house for female orphans*, which was founded and maintained by the late bishop of Labini, but, unfortunately, not conducted on the best principles. Every body, rich and poor, would feel himself under great obligation to this worthy man, if proper care was taken that they were educated to make good servants, and instructed, for this purpose, to cook, to wash, to iron, to clean houses, to write, and to be dutiful wives and careful mothers. This would be the more acceptable, as good female servants are seldom to be met with, and female cooks not at all: but nothing of these useful arts are taught.

These children are scantily and miserably nourished, never get animal food to eat, and are always locked up. The work they all learn is to weave and spin cotton, of which the greatest part of the gain goes for the mainte-

nance of the house ; and a small part of it only to the person who earns it. Cloth for shirts and common apparel is the principal article they weave.

If a man chuses to marry one of these girls, he mentions his intention to the matron, who allows him to see them all ; which he does, and makes his choice at the first sight. But, alas ! what satisfaction does a wife give who has learnt nothing but to cross herself, to say Ave Marias, and other Latin prayers, to hear mass in the same language, (of which she understands not a word,) and to weave cotton. If the chaplains who say mass were, at least, at the same time, obliged to teach them reading and writing, they would be of real use.

The before named Mr. Naudi having lately been chosen one of the superintendants of this institution, many improvements may be expected from his activity, zeal and knowledge.

Bread, viz. being the principal nourishment of these orphans, it is of great consequence, that he has already discovered great frauds perpetrated by the baker in this article, who has the contract for it. The doctor hopes to be able to maintain, in future, the institution by the labour of the girls only, in which, with better regulations, there is no doubt, he will succeed.

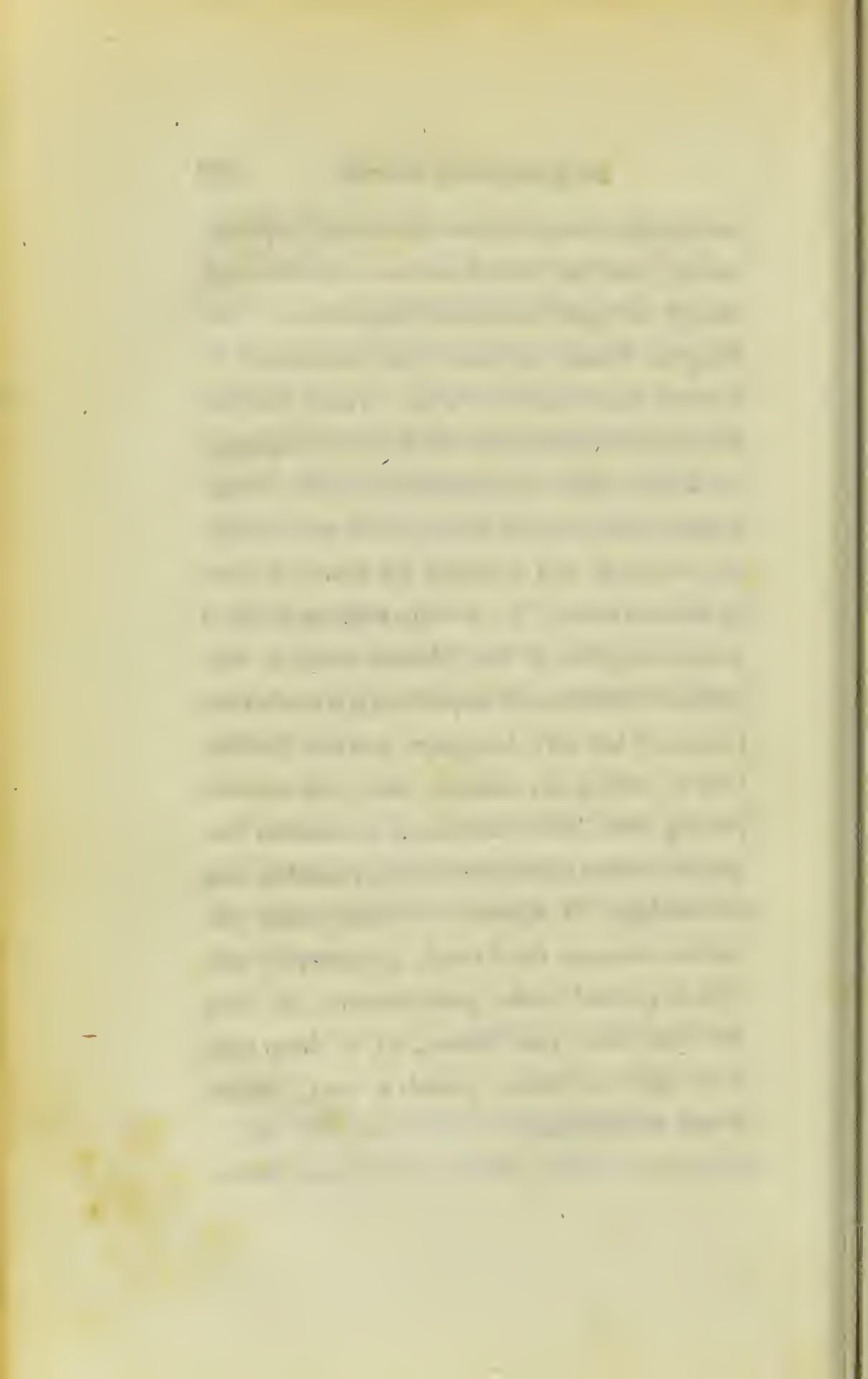
The present house is not very healthy; the children have been removed from their original abode, for the better accommodation of the garrison.

There is *another house* for the same purpose at *Vittorioso*, but being nearly instituted upon the same plan, it is enough to indicate here its existence.

§ 93.

The last institution, which might be an excellent nursery for servants, makes me add this

paragraph, though otherwise not in its place; namely, that the *Maltese servants are not cheap*, though not quite so dear as English ones. Intelligent female servants, who understand to work at their needle, to wash, to iron, &c. and who speak any other but the Arabian language, are scarce, and, in consequence, not cheap. Female cooks are not to be got at all. Cooking, washing, and cleaning the house, is done by men servants. To an unaccustomed ear it sounds singular, if the Maltese servant, who speaks the Italian, but imperfectly, transfers the custom of her own language into the Italian, that of calling her mistress *thou*, and without putting Mrs. before her name, as modern languages do not admit of this rather familiar way of talking. If allowed to chuse male domestics amongst the French prisoners of war, who in general make good servants, one may get them from that source, at a cheap rate, from eight to twelve pounds a year, besides board and lodging.



CHAP. IV.

OF THE SCHOOLS OF THE MEDICAL FACULTY OF
THE UNIVERSITY, AND OF THE HOSPITAL.

§ 94.

MANY invalids going to Malta, like to take their families with them; they are therefore anxious to know before hand what they have to expect for the *education of their children*; which I will now shortly detail. In none of the villages is a public school established; the children grow up, like other animals, *i. e.* they eat, drink, work, and sleep. Females begin young to spin and weave cotton, and some males sweep the streets in the capital, or carry

home, in baskets, what ladies or gentlemen have bought in the market. To become employed for this labour, they are accustomed to ask every body they meet, the equivocal question : "Sir, do you want a boy ?" To which phrase their knowledge of the English language is confined.

§ 95.

For Maltese children, both boys and girls, exist a *number of schools* in Valetta, in convents, and there are private teachers ; but it is not worth any foreigners while to send his children there, except to the public school, held in the building of the Ex-Jesuits, which is the continuation of the school of the Jesuits, who were, in their time, distinguished for their good education. It is a preparatory school for the university, where both ancient and modern languages; arithmetic, mathematics; navigation, drawing, writing, religion, &c. are taught.

Mrs. O'Brian has established an English

ladies' school, where she, however, receives boys too; for which government, to support her undertaking, has very properly granted her the house. The price for the school is ten shillings per month, for which she teaches spelling, reading, and needle work. All other lessons in dancing, writing, &c. must be paid separately. The children go twice a day, and remain there three hours in the morning, and two in the afternoon.

Mr. Noble, an intelligent and respectable merchant, has the merit to be the first who has established a school for English boys; which is a good one, and therefore frequented. Government also granted him for it a floor of the same house in which the former is kept. The prices of both are nearly the same, though the disciples of the last learn much more, *viz.* reading, writing, declamation, English, French, and Italian, mathematics, geography; and when I left the island, the master intended also to have the Latin language taught. All lessons are given with great attention.

In *Burmola*, on the other side of the harbour, exists another Latin school; and a servant keeps an English one.

In *Civita Vecchia*, the seminary of the church, is also a Latin school, in which sciences and languages are taught by means of the Italian.

§ 96.

I must not omit to say something of *the medical faculty of the university*, of which the knowledge, and the consideration of its improvement, becomes the more serious, since the inhabitants are excluded from the universities of Italy, and confined to acquire their knowledge at *Valetta*. All the classes of the university are held, together with the Latin school in the convent of the Ex-Jesuits, and the public disputations, examinations, academical orations and degrees, delivered and given in the church of the building.

Though, in speaking of the university, I limit myself to my own faculty; I allow myself only to deviate, in regretting the want of an astronomer, to observe the heavens in such a clear atmosphere. The grand-master, Rohan, was already persuaded of the use of such an establishment, and sent to France for an astronomer; but since he is gone, nobody succeeded him; and the observatory serves only to discern the arrival of the shipping.

I am now going to notice a few essential defects of the medical faculty, of which the first is, that Dr. Abela is the sole lecturer, appointed to treat all the branches of this important science. Now, is it possible, that one person, even if he were a Solomon, can be able to teach in two hours a day, all branches of the healing art, much less Dr. Abela? A second defect is, the want of an anatomical theatre; a third, that of clinical lectures; and a fourth, that of

a professorship of natural history, and of experimental philosophy.

When the project of the botanical garden was set on foot, a monk of the Carmelite order was chosen for the professorship, who was sent to Palermo, to prepare himself for it; but unfortunately he did not stay long enough to make sufficient progress in the sciences; and what is worse, Don Carlo Jacinto has no more real taste for botany, than monks commonly have for science. He teaches no botany; and physicians are created at Valetta, without being able to acquire any knowledge of the instruments, with which they are to operate; and the garden remains in the imperfect state, which has been described before.

The necessity of a chair of chemistry did not escape the attention of the late governor, but he appointed Dr. Naudi to fill it. The law would be very salutary, which obliged all the apothecaries of the island, to attend the lec-

tures, they being all in want of chemical knowledge. I am afraid to say, that many are not able to make extracts of plants, or any other equally easy preparation. May some person of influence suggest the necessity of creating a professor of surgery and anatomy ! These are the principal wants of the medical faculty of the university which strike me, and which, if supplied, will probably lead to many more improvements.

§ 97.

I think it proper, before I finish, to add *some notice of the hospital*, partly because it is nearly connected with the university, as it cannot be improved without the other profiting by it, and partly because the whole order owes its origin, and takes its name, from the hospital of St. John, at Jerusalem. The order had its beginning in the time of the Crusades, when, at Jerusalem, an hospital was built for the recep-

tion of sick pilgrims, in which the first knights waited upon the patients, and defended also the pilgrims against the attacks of the Mahommedans, in their journey to Jerusalem ; thus uniting religious with military duty. From this source sprang a practice, which was partly preserved till our days, *viz.* that the knights waited, at least, on St. John's day, at the dinner of the patients ; that they dined on that day from plate ; that a number of superfluous officers were attached to the hospital ; that the building was unnecessarily spacious, &c. After the knights were driven from Jerusalem, they established themselves at Rhodes, which they were also obliged to leave to the superior forces of the Turks, and they received then Malta as a present from the Roman emperor, where they built again a large edifice for the hospital. But when we took this island from the French, the house of the hospital was looked upon as a property of the order, and was consequently taken possession of, and the patients were sent into a reformed convent, opposite to it, which

not being built for an hospital, is very ill adapted for it.

The edifice of the hospital of the order was converted to a general military hospital for those soldiers who returned ill from Egypt, and it served again for the same purpose, when the army under Sir James Craig went to Italy; but now it hardly answers for any other end, than to contain one of the other regimental hospitals, and hospital stores; and the rest of the building is empty, except that some persons, *viz.* the apothecary, hospital mates, &c. reside in it.

The *Maltese hospital*, which now remains, has lost all kind of luxury, except the superfluous number of officers; and it would be of greater utility to the public, if the expences they cause, were employed for the institution of a clinical school. If for this purpose, twelve male, and an equal number of female patients, were chosen out of both hospi-

tals, and the most experienced and learned physician was to conduct the most advanced medical students, twice a day, to these beds ; and if he trusted a patient to each student, to let him compose, and afterwards read, in the presence of the others, and subject to his own censure, the history of the disease under which the patient labours ; and let him propose the remedy the student thinks the most advantageous, together with his reasons why he believes it the most salutary. In case of death, the body should be opened by the professor, under the eyes of his disciples, to find out the cause and seat of the disease, and to declare it candidly, when the dissection showed that he was mistaken in the supposed cause. Then the hospital would be doubly beneficial for the inhabitants of the island, serving, at the same time, as a medical school, without increasing the expences, because they could be saved in other ways. This benefit could be rendered more extensive, if in the same hospital an anatomical theatre was established, for which the

considerable number of deceased would serve, as a rich source of corpses. For it is a melancholy circumstance, that though they give the degree of Doctor of Physic at Valetta, no anatomy is taught, if some imperfect lectures on osteology, of Dr. Abela, are excepted. What a blessing would it be for many suffering inhabitants, if government directed its attention to the interesting point of improving the medical faculty of the university, which could be done so easily.

Four physicians, and an equal number of surgeons, attend the hospital, whereas half the number would be sufficient ; but the worst of it is, that they change every month in performing their duty, so that a patient, who comes in the last days of the month, falls the first of the next immediately under the hands of another practitioner ; and I need hardly add, that in most cases the whole plan of the cure is altered. Whether it is done to the advantage of the patients, is a question. Or, is there any body

who will believe it otherwise, from a set of Physicians and Surgeons, whose education has not been more liberal, than it can be the case at Valetta? They endeavour to acquire practice by contradicting and blaming one another, and acting otherwise than their colleagues, though not better. What a lamentable effect must this have upon the recovery of the patients!

Besides these mentioned four Physicians and Surgeons, there is an equal number of under-physicians and under-surgeons employed; also four Governors, Sub-governors, Apothecaries, four Chaplains, dressers, persons who only bleed and cup, even one person, who carries smelling-bottles at the medical visit, for fear, that any body might faint away, (and really the atmosphere is, in some wards, in such a state, that the fear is not ill founded) a person who keeps the linen under his care, even disciples, &c. &c. Every one of them is paid, though many are of no use. One govenor and one sub-governor would be quite sufficient to rule the institu-

tion, especially if for both places experienced Physicians were chosen, who understand the management of hospitals. The four governors are noblemen, who, I fear, understand little of the duty, they are to perform ; the worst is, the time of their duty, changes every month, so that none of them has time to learn the business ; the less, as all four are again changed every year, before any one can be initiated in his duty. What for, four Chaplains, what for, a separate person, who bleeds and cups ? &c.

I have been present at the surgical visit after two o'clock in the afternoon in summer, when the surgeon was obliged to dress the patients by candle light. He saw the only window of the end of the ward open, and ordered it to be immediately shut, adding, that he was not a friend to fresh air for surgical patients. This philosopher is a native of Sicily.

Many of the regulations of the hospital are

very defective ; I shall here only mention one. If a Physician or Surgeon wants to have a consultation about a difficult case, he dares not make his application to his colleagues, but to the govenor on duty, who orders whoever he pleases, to attend the consultation. What a hurtful delay, the more improper, as commonly no time is to be lost, when in an hospital a consultation is required.

The utility of this hospital is, under these and many more prejudicial circumstances, much lessened, and I am persuaded, considering the method of curing, that not many patients are here recovered by means of the healing art, and that only those escape from death, who owe their recovery to their good constitution, or to the mild character of their disease. It is a necessary distinction to be made, whether a patient recovers through the remedy, he has taken, or only during the time, he takes a remedy, which is not efficacious enough to prevent his recovery. Physicians are often too

much honored, as in both cases the recovery is attributed to their skill.

The hospital of the women, which lays opposite, labours under the same faults, and I need not therefore speak of it in detail.

§ 98.

Let me finish with the remark, that the *inhabitants* of *Malta* and *Gozo* amount to 94,000; that they are a strong, laborious people, who live principally by means of agriculture, horticulture, trade, carrying goods from one harbour to the other, professions, cotton manufactures, navy and army service. Some trades are exercised in great perfection. What fashionable Lady does not know the neat golden chains of Malta?

I should think myself fully rewarded for my pains, could I be persuaded, that I have given any satisfaction in this description of Malta, especially

if I may have induced a single invalid to go to that remarkably healthy and pleasant climate, from whence he might return, perhaps, restored to health, a blessing he could not hope to obtain in a more northern latitude.

16, *Dover Street,*

June, 1810.



